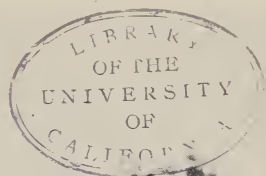


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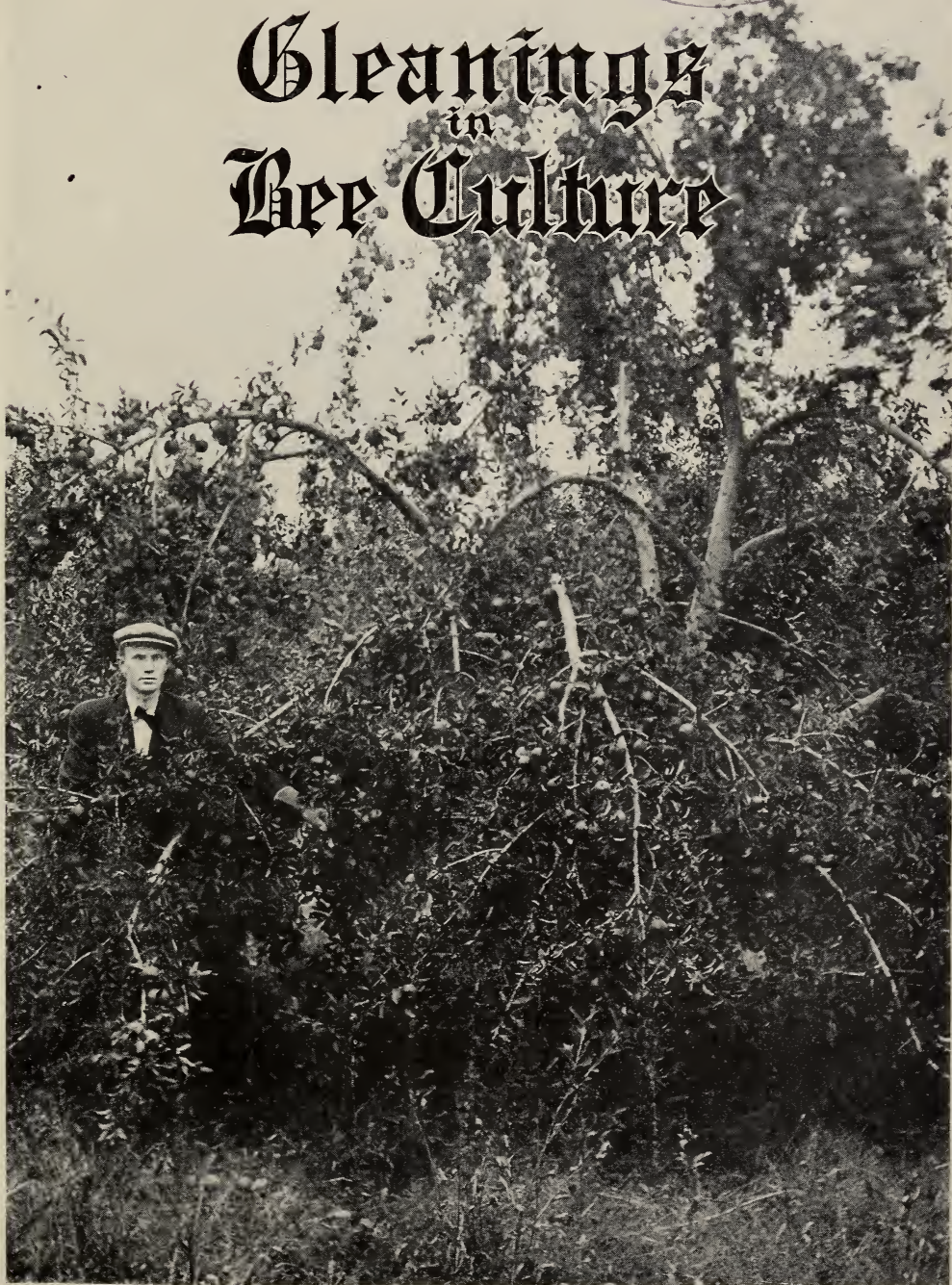
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# Gleanings in Bee Culture





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Gleanings in Bee Culture, Medina, Ohio



## EMBARGO ON BEE SUPPLIES

Pennsylvania, New Jersey, New York, and New England states beekeepers should not delay putting in their stock of supplies as early as possible. The eastern railroads are so heavily laden with freight it is indefinite as to just how long it will take to receive goods after they leave the factory or dealer. Ordering your requirements a month earlier than usual will cost no more, and will assure you of having supplies on hand when the time comes to use them. This will allow for any delay which might occur while in transit.

As never before we are especially prepared to take care of the beekeepers' orders and give prompt service. Above all, we assure the purchaser of satisfaction, and we never consider a deal closed until we feel sure our customer has received the guarantee of satisfaction which goes with every package, crate, or box leaving our factory.

Those beekeepers who have not received a copy of our new RED CATALOG should not hesitate to send for a copy. It gives descriptions and prices of all the beekeepers' supplies, from the requirement of the smallest to that of the largest beekeeper. A post card will bring it to your address free.

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Dealers Everywhere.

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**W. T. FALCONER MFG. COMPANY, FALCONER, NEW YORK**

where the good beehives come from

## HONEY MARKETS

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchants. When sales are made by commission merchants the usual commission (from five to ten per cent), cartage, and freight will be deducted; and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage and other charges are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

GRADING RULES OF THE COLORADO HONEY-PRODUCERS' ASSOCIATION, DENVER, COL.,  
FEBRUARY 6, 1915.

### COMB HONEY.

**FANCY.**—Sections to be well filled, combs firmly attached on all sides and evenly capped except the outside row next to the wood. Honey, comb, and cappings white, or slightly off color; combs not projecting beyond the wood; sections to be well cleaned. No section in this grade to weigh less than 12½ oz. net or 13½ gross. The top of each section in this grade must be stamped, "Net weight not less than 12½ oz."

The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

**NUMBER ONE.**—Sections to be well filled, combs firmly attached, not projecting beyond the wood, and entirely capped except the outside row next to the wood. Honey, comb, and cappings from white to light amber in color; sections to be well cleaned. No section in this grade to weigh less than 11 oz. net or 12 oz. gross. The top of each section in this grade must be stamped, "Net weight not less than 11 oz." The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

**NUMBER TWO.**—This grade is composed of sections that are entirely capped except row next to the wood, weighing not less than 10 oz. net or 11 oz. gross; also of such sections as weigh 11 oz. net or 12 oz. gross, or more, and have not more than 50 uncapped cells all together, which must be filled with honey; honey, comb, and cappings from white to amber in color; sections to be well cleaned. The top of each section in this grade must be stamped, "Net weight not less than 10 oz." The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

*Comb honey that is not permitted in shipping grades*

Honey packed in second-hand cases.

Honey in badly stained or mildewed sections.

Honey showing signs of granulation.

Leaking, injured, or patched-up sections.

Sections containing honey-dew.

Sections with more than 50 uncapped cells, or a less number of empty cells.

Sections weighing less than the minimum weight.

All such honey should be disposed of in the home market.

### EXTRACTED HONEY.

This must be thoroly ripened, weighing not less than 12 pounds per gallon. It must be well strained, and packed in new cans; sixty pounds shall be packed in each five-gallon can, and the top of each five-gallon can shall be stamped or labeled, "Net weight not less than 60 lbs."

Extracted honey is classed as white, light amber, and amber. The letters "W," "L A," "A" should be used in designating color; and these letters should be stamped on top of each can. Extracted honey for shipping must be packed in new substantial cases of proper size.

### STRAINED HONEY.

This must be well ripened, weighing not less than 12 pounds per gallon. It must be well strained; and, if packed in five-gallon cans, each can shall contain sixty pounds. The top of each five-gallon can shall be stamped and labeled, "Net weight not less than 60 lbs." Bright clean cans that previously contained honey may be used for strained honey.

*Honey not permitted in shipping grades.*

Extracted honey packed in second-hand cans.

Unripe or fermenting honey weighing less than 12 lbs. per gallon.

Honey contaminated by excessive use of smoke.

Honey contaminated by honey-dew.

Honey not properly strained.

NATIONAL BEEKEEPERS' ASSOCIATION GRADING RULES

*Adopted at Cincinnati, Feb. 1913.*

Sections of comb honey are to be graded: First, as to finish; second, as to color of honey; and third, as to weight. The sections of honey in any given case are to be so nearly alike in these three respects that any section shall be representative of the contents of the case.

### I. FINISH.

1. *Extra Fancy.*—Sections to be evenly filled, combs firmly attached to the four sides, the sections to be free from propolis or other pronounced stain, combs and cappings white, and not more than six unsealed cells on either side.

2. *Fancy.*—Sections to be evenly filled, comb firmly attached to the four sides, the sections free from propolis or other pronounced stain, comb and cappings white to slightly off color, and not more than six unsealed cells on either side, exclusive of the outside row.

3. No. 1.—Sections to be evenly filled, comb firmly attached to the four sides, the sections free from propolis or other pronounced stain, comb and cappings white to slightly off color, and not more than 40 unsealed cells, exclusive of the outside row.

4. No. 2.—Combs not projecting beyond the box, attached to the sides not less than two-thirds of the way around, and not more than 60 unsealed cells exclusive of the row adjacent to the box.

#### II. COLOR.

On the basis of color of the honey, comb honey is to be classified as: first, white; second, light amber; third, amber; and fourth, dark.

#### III. WEIGHT.

1. Heavy.—No section designated as heavy to weigh less than fourteen ounces.

2. Medium.—No section designated as medium to weigh less than twelve ounces.

3. Light.—No section designated as light to weigh less than ten ounces.

In describing honey three words or symbols are to be used, the first being descriptive of the finish, the second of color, and the third of weight. As for example: Fancy, white, heavy (F-W-H); No. 1, amber, medium (1-A-M), etc. In this way any of the possible combinations of finish, color, and weight can be briefly described.

#### CULL HONEY.

Cull honey shall consist of the following: Honey packed in soiled second-hand cases or that in badly stained or propolized sections; sections containing pollen, honey-dew honey, honey showing signs of granulation, poorly ripened, sour, or "weeping" honey; sections with comb projecting beyond the box or well attached to the box less than two-thirds the distance around its inner surface; sections with more than 60 unsealed cells, exclusive of the row adjacent to the box; leaking, injured, or patched-up sections; sections weighing less than ten ounces.

CHICAGO.—The market continues to drag, there being a heavy supply on sales, especially of comb honey. It is difficult to quote prices under these conditions; but it is seldom that the best grades of white comb bring 14 or 15 cts. per lb., most of the sales being made around 13. Extracted white brings 7 to 8; ambers, 6 to 7. Beeswax is steady at 30 to 32.

R. A. BURNETT & Co.

Chicago, April 4.

NEW YORK.—There is no demand for comb honey to speak of; and while No. 1 and fancy white are cleaned up, there is quite a stock of off grades still on the market for which there is practically no demand, and hard to dispose of at any reasonable price. The market on extracted honey is in a little better shape, and prices now show an upward tendency, especially on fancy West Indian honey; supplies sufficient to meet all demands. Beeswax steady at from 29 to 31, according to quality.

New York, April 6. HILDRETH & SEGELKEN.

INDIANAPOLIS.—The demand for both comb and extracted honey has been light of late, due to the weather condition mostly. Choice white comb is selling at \$3.75 to \$4.00 per case; No. 2 white comb, \$3.50. Extracted of excellent quality is bringing 9½ to 11. For wax we are offering 28 cts. cash or 30 in trade.

Indianapolis, April 4.

WALTER S. POWDER.

DENVER.—Local demand for comb honey light with ample supply. We are selling in a jobbing way as follows: Fancy white, per case of 24 sections, \$3.15; No. 1, per case, \$2.93; No. 2, per case, \$2.70. White extracted, per pound, 8½ to 8¾; light amber, 8 to 8¾; amber, 7 to 8. We pay 25 cts. per pound in cash and 27 cts. per pound in trade for clean yellow beeswax delivered to us here at Denver.

THE COLORADO HONEY-PRODUCERS' ASSOCIATION.  
Denver, April 6.

Frank Rauchfuss, Mgr.

KANSAS CITY.—The supply of extracted honey is large, and the demand light. The supply of comb honey is not large, but the demand is light. We quote No. 1 white comb, 24-section cases, per case, \$3.00; No. 2 ditto, \$2.50 to \$2.75; No. 1 amber ditto, \$2.75 to \$3.00; No. 2 ditto, \$2.50 to \$2.75; white extracted, per pound, 7 to 8; amber, 6 to 7; No. 1 beeswax, 28; No. 2, 25.

C. C. CLEMONS PRODUCE CO.

Kansas City, April 5.

ST. LOUIS.—The demand for comb honey in this market has been very light of late, but we have had a fair movement in extracted honey. Stocks here are not plentiful, especially southern extracted honey in barrels; but the stock of 60-lb. cans is larger. We are getting for No. 1 white comb honey \$3.75; light amber, from \$3.25 to \$3.50, and amber from \$2.50 to \$3.00; extracted honey in 60-lb. cans from 6½ to 8½; southern amber in barrels from 5 to 6; dark, 1 ct. less. Beeswax is very firm at 29½ for pure; impure and inferior, less.

R. HARTMANN PRODUCE CO.

St. Louis, April 8.

ZANESVILLE.—At a season when the honey business is usually light, we are having a fair and normal demand. There has been no marked revision of prices. As heretofore, best grades of white comb bring around \$4.00 in single-case lots. Some lots of Western are offered at \$3.75. On quantity orders some concession is allowed, and of course jobbers are given the usual 12 per cent discount from list prices. Extracted in cans is quoted at 9 to 11 for best grades of white, there being little demand for amber. Twenty-nine cents cash, 31 in trade, are ruling prices paid producers for beeswax. Selling prices are largely arbitrary, varying with quality and quantity.

Zanesville, April 6.

E. W. PEIRCE.

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Anything and everything you might need in Bee Supplies—and at right prices. Ship us your old Combs and Cappings for rendering. Write for terms.

**THE FRED W. MUTH CO.**

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CINCINNATI, O.



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This can be accomplished if you have a young prolific queen and a strong colony when the honey-flow arrives. Many beekeepers fail to secure the greatest possibilities from their bees because their colonies are not strengthened and built up early in the season, making it possible for them to take advantage of the honey-flow when it arrives. This should be a good season for clover honey, as weather conditions last year throughout the country were the best for securing a good strong stand of clover we have had for many years.

We now have a large queen-rearing outfit in Florida for the express purpose of supplying you with **EARLY QUEENS AND BEES IN PACKAGES**. We are breeding from queens that gave a surplus of 300 pounds per colony in a 24-day honey-flow. You should have this strain of bees in your yard, and insure the placing of each of your colonies on a paying basis. We have a large supply of queens at this time, but as orders are coming in rapidly, we recommend that you provide for your requirements early.

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Untested .....	\$1.50	\$ 7.50	\$12.00
Tested .....	2.00	10.50	18.00
Select Tested ...	3.00	15.00	24.00

Tested Breeding Queens, \$5.00 and \$10.00 each

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One-frame Nucleus ....	\$2.00	Three-frame Nuclei ....	\$4.00	Eight-frame Colony ...	\$ 8.50
Two-frame Nuclei ....	3.00	Five-frame Nuclei ....	5.00	Ten-frame Colony ....	10.00

PRICES ON BEES BY THE POUND F. O. B. SHIPPING POINT. Shipment begins May 10.

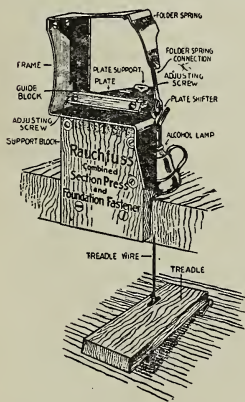
	1	6	12
½-lb. ....	\$1.50	\$ 7.50	\$12.00
1-lb. ....	2.00	10.50	18.00
2-lbs. ....	3.00	15.00	27.50
3-lbs. ....	4.00	21.00	36.00
5-lbs. ....	5.50	27.50	50.00

(These prices are without queens)

Address all communications to

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# Gleanings in Bee Culture

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Established 1873

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Issued semi-monthly

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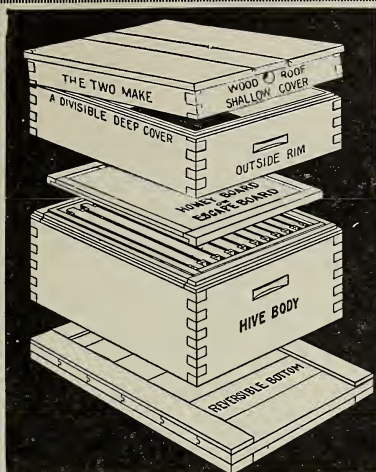
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Price: \$14.75 for five hives, delivered to any station in the U. S. east of the Mississippi and north of the Ohio Rivers.

Air spaces or packing as you prefer. Seven-eighths material in the outer wall, which means that they will last a lifetime. Used and endorsed as the best hive on the market by many prominent beekeepers of this and other countries.

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ALLEN LATHAM.

Send for catalog and special circulars. We are the bee-hive people. Send us a list of your requirements for 1916 and let us figure with you.

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**"Superior" Foundation**

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Our 1916 catalogs now out. Postal will bring you one. Root's goods at Root's prices. Prompt shipment.

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Send your name for new 1916 catalog.

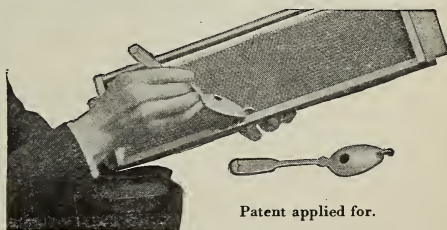
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Saves expense, time, and labor.

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On Sale Only by

J. P. Martine & Son

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# Preparedness!

Your success this season, Mr. Beekeeper, depends on being ready. You need to buy your supplies now.

## Root's Goods mean Real Preparedness.

We sell them in Michigan. Send for catalog. Beeswax wanted---  
30 cts. cash, 32 cts. in trade; wax delivered to Lansing.

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## "If Goods are Wanted Quick Send to Indianapolis"

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Indications just now are very favorable for a good season; but we are, of course, at the mercy of the weather conditions. A good season means an excessive demand for the line which we handle, and we mention this, urging our friends to place their orders before the goods are really needed, that none may be disappointed.

We carry Root's goods and sell at their prices; and considering this as a shipping-point, we can save you time and freight by having your orders come to this house.

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Let us have the pleasure of mailing you our free catalog.

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873 Massachusetts Avenue

# NOW IS THE TIME

To order your supplies, and thus have every thing in readiness for the spring.

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We carry a full line of Root's Goods at all times, and are always prepared to fill any and all orders on short notice.

Hives, supers, frames, sections, comb foundation, section-presses, foundation-fasteners, queen-excluders, queen and drone traps, swarm-catchers, feeders, honey and wax extractors, capping-melters, honey-knives, honey-tanks, honey-packages, shipping-cases, bee-escapes, bee-veils, bee-gloves, bee-brushes, smokers—in short, everything the beekeeper requires for the proper conduct of an apiary.

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Until You See  
Our Catalog

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While you are starting the year's work—getting your bees ready for business—taking stock of supplies on hand and speculating as to what the season's outcome will be

## Make This Resolution

That you will use LEWIS BEEWARE this year—because it means success insurance to you—because it means beehives and parts made of the best material by skillful workmen—because it means goods accurately and systematically packed—because it means sections made of bright lumber, highly polished, accurately dovetailed, and scientifically grooved.

## Lewis Hives are Built Like Furniture

Lewis Sections are the Kind that do not Break in Folding

You will find LEWIS BEEWARE almost at your own door—thirty distributing houses in the United States and foreign countries. If you have not one of our catalogs send for copy at once.

**G. B. Lewis Company, Watertown, Wis., U.S.A.**  
Exclusive Manufacturers Lewis Beeware

# SWEET - CLOVER SEED

## Quick Germination

Get our "Scarified" Sweet-clover Seed, which will germinate from 85 to 95 per cent the first year, and thus insure you a good stand right from the start. By sowing our seed you will save money, as it takes only about half as much scarified to sow an acre as ordinary hulled seed.

PRICES	1 lb.	10 lbs.	30 lbs.	100 lbs.	60 lb. a bu.	5 bu. a bu.	10 bu. a bu.	Lbs. per acre
Unhulled White, re-cleaned	\$0.25	\$2.00	\$5.10	\$16.00		\$4.80	\$4.50	25 to 30
Hulled White, re-cleaned and scarified	0.30	2.75	6.75	22.50	\$13.50	13.00	12.50	6 to 10
Hulled Yellow, re-cleaned and scarified ( <i>Melilotus Officinalis</i> )	0.20	1.80	5.10	17.00	10.20	9.50	9.00	8 to 12

When seed is wanted by parcel post, be sure to include postage. Bags will be included in the weight in parcel-post shipments.

**Please Note.**—All of our seed is thoroly cleaned. The scarifying process usually breaks some of the seeds, and we remove all broken seeds. This is an important saving to you. Samples on application.

## Dadant & Sons, Hamilton, Illinois

**YELLOW SWEET CLOVER.**—Many people fail to recognize the value of the biennial yellow sweet clover as a honey-plant. The fact that it blooms two weeks earlier than the white variety makes it especially valuable to the beekeeper. Be sure, however, to get the biennial variety as quoted above.

# GLEANINGS IN BEE CULTURE

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APRIL 15, 1916

NO. 8

## EDITORIAL

### Our Cover Picture

A STRIKING testimony to the value of bees as pollinators is given by George H. West in his article, page 317. The picture shows a bountiful yield, surely, especially since the crop had been thinned down twice.

### Scarcity of Maple Sugar and Syrup

FROM present advices the amount of maple sugar and syrup this year will be very small in comparison with other years. This ought to stimulate the demand for good extracted honey. If the good housewife who has a preference for maple syrup can't get it, and desires a high-grade sweet, she will take honey.

### Indiana Beekeepers, Take Notice

IT is not often that GLEANINGS takes a hand in politics; but here is a case where a beekeeper is running for Congress, and we should like to call the attention of the Indiana beekeepers to that fact. S. H. Burton, of Washington, Ind., who is a frequent contributor to these columns, is a candidate for member of Congress on the Progressive ticket, in the 2d Indiana District. He is an extensive fruit-grower and beekeeper, and he stands right on the temperance question. It seems to us that he deserves the support of those interested in good government.

### Manufacture of Sugar from Sugar Cane in the United States Decreasing

FROM the Department of Commerce, Bureau of the Census, we learn that in five years the manufacture of sugar from sugar cane has decreased 29.3 per cent. Reports were received from 181 factories, 168 of which were located in Louisiana, 5 in Florida, 4 in Texas, 2 in Mississippi, and 1 each in Arizona and South Carolina. In the season of 1913-14 the total valuation of the sugar produced was \$18,947,683; molasses

and syrup, \$2,631,212; by-products, \$56,477. Total valuation for the season of 1913-14, \$21,635,372.

In 1909 there were 214 factories, and the valuation of the sugar produced was \$26,095,673; molasses and syrup, \$3,211,191. Total valuation in 1909, \$30,620,738. The value of the annual production has therefore decreased nearly \$9,000,000, or 29.3 per cent, as stated above.

No figures in this report were given for 1915. No doubt the effect of the last war has been to increase the manufacture of sugar.

Considering the decrease up to 1914 from the figures of 1909 probably the manufacturers of sugar from the sugar beet and the manufacturers of other syrups are largely responsible. Will the time ever come when honey, so far from being a luxury, will become an article of food that it may influence the manufacture and sale of granulated sugar?

### Co-operative Experiments in Apiculture

THE provincial apiarist of Ontario, Mr. Morley Pettit, is now sending out the blanks for the collection of data concerning beekeepers who will assist in performing the prescribed experiments. Such beekeepers in Ontario who have assisted in former years are requested to make formal application for the same experiment as before, as better results are obtained the second year. The following list of experiments, as will be noticed, are those which have to do with swarm control and spring management.

Experiment 1.—Prevention of natural swarming in extracted-honey production by holding the colony together. This is one of the most popular methods. Forty persons tried it last year with good results.

Experiment No. 2.—Prevention of natural swarming in comb-honey production by artificial shaken swarming.

Experiment No. 3.—Prevention of natural swarming by manipulation of hives instead of combs. The instructions will be some-



what changed and improved. This method is especially for advanced beekeepers.

Experiment No. 4.—Method of spring management to get strong colonies for the honey-flow. This includes spring protection and stimulative feeding. Seventy-nine persons tried it last year.

### How Much Wages a Helper in a Bee-yard May Expect

IN the course of a year we receive many inquiries from men having one to five years' experience with bees asking how much wages they could expect were they to hire out to some extensive producer. It is impossible to give a definite answer to such inquiries, for the wage to be expected depends largely upon the individual in question, also somewhat upon the average wage for farm help in the locality, and also upon the employer. There are also different bases of figuring—that is, whether board is included, whether the board includes washing and clothing, etc.

A great deal depends upon the references that can be given. But, after all, perhaps the fairest way is for the employee to work a few days in order to permit the employer to judge as to his ability before the wage question is finally decided. We admit that this is not always practical. Very seldom would such a plan be practical, indeed, if the employee lived at a distance. However, as every producer of honey knows, there are veritable greenhorns who, after a couple of weeks, are worth more than some "experts" of a dozen years' experience. Yes, it depends on the man, on his employer, and on the average wage paid in the locality.

### Are Certain Animals Immune to the Stings of Bees?

ONE of our queen-breeders, Mr. Arlie Pritchard, who had charge of our apiaries last summer, had some white rats for pets. During the late warm spell when the bees took a flight he took some live bees and gave them to one of the rats. He eagerly grabbed them up (as if he were in the habit of doing it), holding them between his front paws, munching them as if they were one of the most delicate morsels he ever ate. Stings? Yes, the bees planted their stings on his pink nose, but, nothing daunted, he went right on munching his meal as if nothing had happened. Mr. Pritchard later pulled out two stings from the rat's nose, but apparently they did not have the least effect.

He also relates that on another occasion he took some toads and placed them in

front of the entrance of a hive and watched them lap up with their long tongues bee after bee. After a big lunch he would open the mouth of one of these toads and find it literally filled with stings; but neither the aforesaid rats nor the toads seemed to suffer any inconvenience.

Certain birds are fond of lurching on live bees. We have repeatedly seen a king-bird catch them on the wing; but apparently his birdship is careful to crush his victim, and so it is claimed he does not swallow it. Reports, however, have shown that there have been found stings in the crops and throats of the birds, but apparently they do not suffer from them.

Mr. Pritchard once tried a mouse. This was caused to go into the entrance of a hive; but the bees stung him, and he soon came out and died a few feet from the entrance of the hive. There were only five stings, but they were enough to cause the death of the rodent.

The white rats, except for color, seem to be the same as the common gray ones that are such a nuisance on the farm. It is probable that ordinary rats are as immune as white to the effects of beesting poison. Is it not possible that the common rat does a considerable damage in an apiary at a time of night when his work would not be discovered?

### A Plea for Warranted Queens

THE following letter came from one of the most prominent queen-breeders in the country—a man who, we know, produces first-class stock; but in view of the fact that some of his fellow-advertisers may feel that we are giving him too big an advantage in an advertising way over all of them we are withholding his name and address. The letter reads as follows:

In reading Mr. Webb's article on mismatched queens it seems he has run into some very careless queen-breeders, surely not representative of the majority of queen-breeders. I was a beginner myself once, and bought lots of queens from different breeders, but never had over one mismatched out of a dozen. I have been a queen-breeder myself for some years in a limited way, and find my mismatings run from 3 to 5 per cent.

For the last two years I have been guaranteeing every queen purely mated, or another queen when returned, and find that very few ever come back; and it gives customers confidence, and increases sales over and above what little loss I may get by returning pure for mismatched queens.

You say in your editorial that guaranteeing queens would open a way for fraud on



the part of customers; but I have never found it so. Most of the small beekeepers are in the game as much for pleasure as profit; and when they feel they have been squarely dealt with and get their money's worth, they have no inclination to take advantage of the queen-breeder.

There is nothing to interfere with any queen-breeder guaranteeing pure mating; but we would recommend that all queens that prove to be mated be returned, and that the queen in the first place, before being sent out, be marked by a peculiar cut in the wings, so that positive identification will be possible.

While we believe in humanity, and believe that most of the world is honest, we know of an instance that occurred last summer where one party was getting queens right and left of numerous queen-breeders, telling them that the queens were unsatisfactory, and asking for a replacement. As a result he secured a lot of extra queens for nothing.

Where one lives in a locality well Italianized, he can afford to guarantee pure mating at very little expense; and, naturally enough, the public will patronize the person or concern that guarantees its stock, prices being equal. In time this will shut out the irresponsible and careless breeders, and compel all to reach a certain standard or quit the business.

The largest bulk of our complaints concerning advertisers have been against a few that furnish queens—not against those who have advertised queens for many years, but rather against a few of the late comers in the field who do not realize nor perhaps understand the importance of having their mating-yard where there are few or no black drones.

### Carrying Bee Legislation Too Far

RECENT discussion in these columns, editorially and otherwise, shows the great possibilities of sending bees in one, two, and three pound lots by express. There is very little likelihood that bees when sent in this way will carry disease if ordinary precaution is taken; and yet there are several states where shipments of bees in pound packages are barred. Already we are getting complaints from these states, to the effect that the beekeepers who are supposed to be protected are being handicapped in that they can get no other bees from outside their own state. The kind of legislation that is too drastic is liable to be overturned, with the result that there will be no protection.

We are informed that European foul brood has made considerable headway in

one state; and yet the beekeepers in that commonwealth propose to bar even queen bees sent by mail. They would thus make it impossible to send vigorous strains of Italians to help combat this terrible disease. Verily, the thing that would safeguard the public becomes a menace. It is time that the beekeepers of the country awake to the folly of carrying things too far.

But perhaps some will object by saying that we have no proof that disease cannot be carried in pound-package form. Some twenty years ago we repeatedly shook out bees from diseased colonies to clear them of American foul brood. We did not call it American foul brood then, because only one kind of foul brood was known. These bees were held in wire packages for twenty-four hours, then given to clean hives on new combs. We never once had a case of bee disease develop in this way. The very essence of the treatment by the Quinby, McEvoy, or Jones plan is to shake the bees from diseased combs and put them into clean quarters. When one receives a shipment of bees without combs the Quinby treatment is automatically put into force.

Objection may be raised that disease might be carried in queen-cage candy, but not more than can be carried by queen-bees in a mailing-cage. While there is danger, the modern queen-breeder today, we believe, is exercising every precaution in that he boils the honey or uses invert sugar in making his candy.

Perhaps it may be said that we are interested in the pound-package business. Admitting this, our interests are infinitesimal as compared with those of the great public at large, who ought to have the privilege of doing an interstate business in the transmission of bees and queens under certain regulations.

The great bulk of bee diseases is carried by broken and smeared-up sections thrown out in the back yard. In the same way extracted-honey packages are sometimes thrown indiscriminately where local bees can get the honey smeared on the inside. The modern glass packages, however, used by the bottling trade, are usually of a type that is useful in the household, and will not, therefore, be thrown away. They will be washed, and the rinsings go into the sewers. The packages can then be used again for the storage of jelly or canned fruit.

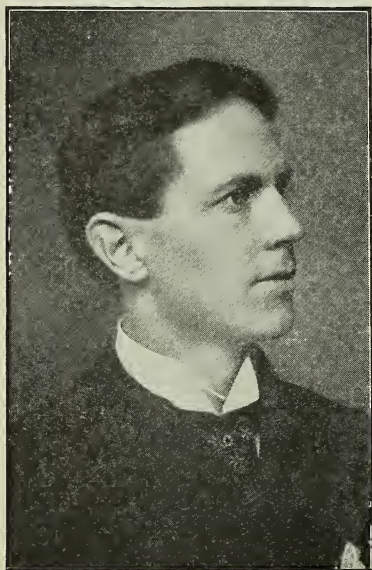
After all, the great danger resides in the comb-honey packages. If we are going to debar the shipment of bees in any form, we might better bar the shipment of comb honey from one state to another or in any state.

But such legislation would be a most serious handicap on the industry.

The National Beekeepers' Association would do well to make recommendations thru a resolution sent to all the state and local beekeepers' societies, urging against going too far. It is these local associations that, in some cases, are responsible for putting thru a law that is both a help and a handicap. But why have the handicap?

### Our Florida Department and its Genial Editor

WE are glad to introduce Prof. E. G. Baldwin, of Deland University, Deland, Fla. While he is professor of Latin, he is an ardent student of beekeeping. He has something over one hundred colonies of bees with a modern equipment for taking honey. He has traveled quite extensively over Florida, and in GLEANINGS for 1911 he wrote a series of articles on Florida beekeeping continuing thru the year. He also furnished some matter for the last edition of the A B C and X Y Z of Bee Culture. He is not only one whom it is a pleasure to know, but his geniality shines forth in almost every line of his printed matter.



PROF. E. G. BALDWIN

For some time back there has been a demand for more matter on the subject of Florida beekeeping, and numerous have been the requests for a department. We have finally made arrangements with our friend to edit it, and now the land of sun-

shine and of "eternal youth," balmy climate, oranges, grapefruit, bananas, and last, but not least, honey, will be represented. Prof. Baldwin needs no further introduction, either to the readers of GLEANINGS nor to the readers of the *Beekeepers' Review*, of which he is one of the associate editors.

### Building up Colonies for the Harvest ; To Him that Hath Shall be Given

THERE is no more important matter in beekeeping than having colonies ready for the harvest—not only strong, but bees of the right flying age to secure a crop. Colonies of only half strength, or below par, will come far short of the strongest colonies in honey production. A beginner would naturally suppose that a half or two-thirds strength stock would gather proportionally as much honey as one of full strength. But this is far from being the case. In the production of comb honey, at least, the half and medium sized colonies possibly might not go up into the supers at all, while the full colonies might store 50, 100, or even 200 pounds each. In the production of extracted honey the relative difference between the different sizes of colonies is not so marked, but great enough to make it very important that all colonies should be regular boomers in size, full to overflowing with bees.

The average novice would readily suppose that the proper thing would be to equalize the strength of the various colonies by the interchange of brood a month or six weeks before the main harvest; but if the weak colonies are strengthened at the expense of the strong, the danger is that all the colonies will be below par, and that the yield of honey will be light.

Our best beekeepers of the country are unanimous in the opinion that the process should be reversed. If the colony is strong, it is only necessary to see that it has plenty of stores. Of the two, four, and six frame colonies, the strongest should be selected, and built up by taking brood and bees from the weaker. By this process the nuclei will be absorbed, and all colonies be brought to honey-gathering strength.

In uniting it is best not to take too much brood at a time, as the reinforced colony may have more than it can take care of properly. If that is the case, some of the brood would be chilled or neglected if unsealed. So far as possible it is advisable to use hatching brood, or near hatching brood, in the early part of the season. Later on, when the weather is settled and warm, the



younger brood can be used. Indeed, we advise at that time taking brood, bees, and all, of the weak nuclei, and giving them to the stronger of the sub-normal colonies. In honey production, either comb or extracted, the weakling colony in the spring is usually good for nothing except to use for making increase. But a better rule by far is to unite in the manner here explained, on the principle that "to him that hath shall be given, and he shall have more abundance; but from him that hath not, shall be taken away even that which he seemeth to have."

But the reinforcing with brood, as already explained, will not accomplish much unless the bees have plenty of stores in reserve, and natural pollen in the combs early in the spring. Of course, after the bees can get pollen from the fields there is no danger of a shortage; but before this time there will be bad weather early in the spring when the bees will not breed readily unless provided with combs containing pollen. Without it they will not do much. It should be borne in mind that in the early spring pollen is nearly as important as stores of sugar syrup or honey. Every good beekeeper will see that combs of it are gathered up in the fall and kept in reserve, and then slipped into the hives early in the spring on the first favorable day.\* There is no better capital in the beeyard than combs of natural pollen. Artificial substitutes can be given; and while these answer the purpose to a limited extent they by no means take the place of the natural article, for the simple reason that the nitrogenous food element that the bees so urgently need is not supplied in the proper form.

### Transferring

At this time of the year we receive many letters inquiring for easy methods of transferring bees from old box hives to hives having movable combs. A great many inquire whether they cannot remove the box hive, put a movable-comb hive in its place, and then put the box hive on top, the idea being to have the bees work down into the lower hive. This plan is usually uncertain. If the queen is caught and put below, and a queen-excluder put between the two, the results are far better. A still better plan, however, is the one in which the box hive is below and the new hive on top. F. Eric Millen, of the Entomological Department of the Michigan Agricultural College, in a special bulletin, No. 76, of the Experiment Station, discusses a number of plans for

transferring, including the Guernsey plan, which has been given in substance in GLEANINGS before, but which will bear repeating here.

At a time when the box hive is crowded with bees, usually in May or early June, the transfer is commenced. The beekeeper provides a hive-body containing one frame of unsealed brood placed midway between a sufficient number of frames of drawn comb or full sheets of foundation to fill the hive-body. The box hive is then opened, and the new hive-body, with brood and combs, or foundation, placed on top. In a few days, usually, the queen will be found laying in the upper (or new) hive-body; but if foundation only is used it may be a week or two before the queen comes up. As soon as the beekeeper is sure the queen is in the upper hive-body a queen-excluder is placed between the box hive and the new hive, and left there for twenty-one days. When examining for the queen it is a good plan to slip the excluder between the two hive-bodies before disturbing the bees very much, as the queen is liable to run below. If, on examination, it is found that the queen has not commenced working in the new hive, the excluder must, of course, be removed and replaced after the queen ascends. Supers may be added to the new hive as required, and work proceeds normally. The success of this plan depends on getting the queen to ascend and commence working in the new hive, and, after that is accomplished, in preventing her return to the box hive. After the queen has been established in the upper new hive, and when the queen-excluder is in position, close up all outside entrances to the old box hive and provide entrance to the new hive by inserting wedges between the two hive-bodies. A sloping alighting-board, extending from the new entrance to the ground, will aid the bees in making a speedy entrance. Twenty-one days after the queen-excluder is placed between the hives, with the queen above, all the worker bees will have emerged from their cells in the box hive.

Prepare an escape-board by tacking a strip of wood just over the edge of the circular hole in the bee-escape. This strip is to aid the bees in climbing up to the Porter bee-escape. Place the board with bee-escape upside down between the hives in place of the queen-excluder. Two days after the escape has been placed between the hive-bodies, all the bees will have gone above, and the old box can be broken up and the combs rendered into wax.

We recommend the Heddon short method of transferring as given in the A B C and X Y Z of Bee Culture. We have so many calls for this that we have printed circulars that we send out on request, giving this plan.

Mr. Millen, in the bulletin above referred

\* It is not advisable to have such combs in the hive during mid-winter.



to, gives what he calls the water method of transferring. This plan for transferring from diseased combs was given in GLEANINGS, page 237, March 15, last year. Aside from the inconvenience in providing a tank of water large enough, the plan has much to recommend it. Briefly, the plan consists in providing a wash-tub, or other tank large enough and deep enough to allow the box hive to be entirely submerged in water. Remove the top and bottom of the hive and place the new hive on top. While the two hive-bodies are held in contact, very slowly lower the box hive into the water until the bees have been forced off the old combs up into the combs of the new hive up on top.

Mr. Millen's bulletin is interesting, and is well worth careful reading.

### Report of the National Convention in Chicago; Continued from p. 258

On the afternoon of the last day, after the address by S. G. Snooks, Freight Claim Adjuster of the Erie Railway, the delegates brought in their report, setting forth their recommendation in regard to the matter of reorganizing and naming new officers. This has already been given on page 217, March 15.

Following this, Mr. E. D. Townsend delivered an address on the subject of "Shipping Comb Honey by Parcel Post." He showed several packages that he had been using. For the parcel-post trade he did not deem it practicable to ship it further than the second zone. The postage on a gallon of honey for that zone is 19 cts.; on the third zone, 34 cts. But no one, he thought, would pay this latter price.

Names of prospective customers he secured by advertising. While many would suppose that local papers would be the medium, he had found the women's journals of national circulation much more satisfactory. All the names that he secured he kept in a card index, and then followed these up with circular letters which he wrote from time to time. He was surprised, after he had gone into this kind of advertising, to see how many orders he received for honey to go by freight and express. The general results of advertising showed that about 25 per cent was for honey by parcel post, and the rest for freight or express.

A sixty-pound package is a little large for family use. He had been using the half size, or 28-lb. package for freight or express. He would offer as large a package as a family would take. If he offered only a gallon size, a gallon was all they would

take. Where possible he would sell a 28-lb. size; but of course this would be too large for parcel post.

Postal regulations for liquids (and this, of course, includes honey), he said, require that the container shall be hermetically sealed, and the box surrounding the container must have a double thickness. He did not find it practical to use friction-top pails, as they were not secure enough. He used nothing less than the screw top. The suggestion was made, however, that the friction top might be used providing four drops of solder were used to hold the top in place.

Prof. Francis Jager, in charge of the Apicultural School at the University of Minnesota, then followed with an address on Beekeeping Improvements thru Agricultural School Work. There was a time, he said, when we had to learn nearly everything by ourselves. But the time has now come when we have special schools for every line of work. It takes a great deal of time and work to secure the necessary knowledge and experience by oneself. But now one can get his instruction at a school where oral instruction and demonstrations can be given. Beekeeping at the present is taught in a dozen different colleges in the country. Three years ago there were only three such schools of apiculture. They had at their school 160 pupils, the most of whom were from the homes of beekeepers. The object of the school, he said, was to make better beekeepers, not more of them. We not only need better beekeepers but better beeyards. Too many yards are poor and neglected.

They give every year at their school a short course in apiculture, where instructions as well as demonstrations of how to do the work are given. Many questions are answered; as, for example, how to winter bees in a modern packing-case; how many bees to put into winter quarters in order that they may properly maintain their winter temperature; information is furnished in regard to handling bee diseases; where this and that kind of honey can be secured. In Minnesota they are making a large map showing where the beekeepers are located, where foul brood is, where the best clover areas are situated, etc.

The demand for beekeeping instructions has been increasing. At first Prof. Jager tried to do all the work himself, but since has been obliged to call in an assistant.

As the writer was not present at all the sessions he is unable to report all the addresses or papers that were given. Some of them will, therefore, be conspicuous by their absence.

Dr. C. C. Miller

## STRAY STRAWS

Marengo, Ill.



LAURENCE A. P. STONE says, p. 275, "If bees get thru the spring months and to the clover flow without contracting European foul brood, it is almost a sure thing that there will not be any until a scarcity of honey again." I know that is claimed, but here it is not likely to put in an appearance until clover begins.

NEW ZEALAND law, which allowed 26 per cent of water in honey, has been changed to 20 per cent, largely thru the influence of I. Hopkins. Analysis of 51 samples of honey gathered from all parts of the country showed the average water content to be 16.46 per cent—*British Bee Journal*, 79. Is the 25 per cent water allowed in this country a bit liberal?

A. I. ROOT, you say you don't entirely agree with me about cross bees, p. 293. I quite agree with you that bees rarely handled may be crosser than those frequently handled. More than that, if continued generations enough it may become a permanent trait. That doesn't bar out heredity. I think you will agree with me that, if you breed from cross stock, cross bees are likely to result. If the temper is not transmitted by the queen, how is it transmitted?

GEORGE H. REA, p. 273, you say shaking is more economical than dequeening for European foul brood. May be, if a single shake will do. But you say, "In order to keep your bees clean it is necessary to have the surrounding territory clean." "Ay, there's the rub." How am I to control the surrounding territory? You speak of a colony, by the dequeening plan, being left without a laying queen for two or three weeks, and then of little value for the rest of that season. Eight or ten days, not two or three weeks; and before I ever had a case of foul brood I had hundreds of cases of big crops from colonies made queenless for ten days, and my bees don't loaf in that ten days. You say, "By the shaking treatment the bees lose practically no time." Don't they lose practically all they've done in the previous three weeks? They do here. If shaking is more economical for you, by all means shake; but it's more expensive for me.

RATHER startling it is to have Doolittle come out flat-footed, p. 236, and say that European foul brood is not conveyed in the honey. I do know that I have fed honey from diseased colonies without conveying the disease, so I know it is not always thus

conveyed. I am pretty well satisfied that it is *continued* in a colony by the nurses eating diseased larvæ that have not yet become putrid; but how does it get into the hive in the first place, if not by the honey? Likely robbers, in nosing about among the diseased combs with their millions of spores, get spores on their bodies, and a chance one of these in some way gets into the babies' food. If you insist, it can hardly be denied that there is one chance in a thousand that a stray spore may fall into the honey.

THE 4 x 5 plain section is gaining in popularity, we are told, p. 248, but the  $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{7}{8}$  is still in the lead—very greatly in the lead, if I am not mistaken, and at the present rate of gaining popularity it will take many a year for the 4 x 5 to overtake it. It should be remembered that the  $4\frac{1}{4} \times 1\frac{7}{8}$  has made and held its way without any boom—never a boom so far as I know—but in spite of heavy booming of other kinds. We were told that we could market some other kind for a cent or two more a section, and probably a good many tried it only to be disappointed and return to their first love. You, Mr. Editor, prefer the 4 x 5. That helps the 4 x 5 quite a lot. A beginner, seeing your preference, will at once decide the 4 x 5 is the thing for him, will adopt it, and use it successfully, and then think no other kind so good, having tried no other kind. But others of us don't like the 4 x 5, and will none of it. I wonder if we are not considerably more in the majority than you think. Some prefer sizes other than either 4 x 5 or  $4\frac{1}{4} \times 1\frac{7}{8}$ ; but the majority, including a good many who have tried other sizes, prefer the  $4\frac{1}{4} \times 1\frac{7}{8}$ . Now if you odd-sizers would sink your personal preferences, and unite to give the  $4\frac{1}{4} \times 1\frac{7}{8}$  a fourth of the boosting the other kinds have had, don't you believe that in a short time we could be rid of the nuisance of having more than one kind? [The  $4\frac{1}{4} \times 1\frac{7}{8}$  is a long way in the lead, and probably will always hold it. The facts are, the 4 x 5 is making slight gains if the record of sales means anything. Whether it will continue to do so, of course remains to be seen. It would be almost impossible to make the public confine itself down to one section, one hive, one frame, however desirable uniformity might be. If the shoemaker, for example, could sell only one style of shoes, and all black, and no tan, it might simplify his problems in buying his goods; but the fact is, the human race is fond of variety, and variety is the spice of life.—Ed.]



# BEEKEEPING IN CALIFORNIA

P. C. Chadwick, Redlands, Cal.



The sage growth is wonderfully fine, altho the sage weevil gives promise of much injury to the but-tons. I am of the opinion, however, that we shall get a good flow from it.

\* \* \*

The orange will be practically gone this season before the sage gets to yielding. This is the first time I have seen this condition in my twelve years in California.

\* \* \*

Mr. T. O. Andrews, inspector of Riverside County, called to see me last week. He informs me that European foul brood is on the decline, while the American type of the disease is increasing rapidly in some localities.

\* \* \*

All correspondents should enclose stamps for reply to any letters asking for information other than mutual business. It costs only two cents to mail a letter; but when 100 is the figure it runs into dollars, to say nothing of the time and stationery used.

\* \* \*

Mr. E. E. Lawrence expects to return to Doniphan, Mo., within a few days. I am sorry business interests have called him away, for I found him to be a man of high ideals, and a noble gentleman. He will probably take up the queen-rearing business again in time.

\* \* \*

Black brood (European foul brood) in this section of the San Bernardino Valley is more prevalent than it has ever been. At least one apiary of which I know is practically out of commission for this season, while there are many cases in other apiaries. Young Italian queens are, without doubt, the strongest battle-line that can be made for the fight. I am sorry this feature has been greatly neglected by most of the beekeepers around Redlands.

\* \* \*

I wish to notify my correspondents that I have many letters remaining unanswered, and can make no promises as to the dates I can get at them. As with all beekeepers, this is a busy time of the year with me. I walk a distance of twelve miles daily, and at night I can be found in my shop busy getting supplies ready to go out to the apiaries. All together, my time is well filled, and I give no promise of immediate answers.

In the March issue I gave my methods of swarm control, which as a rule have worked well for me. This season, however, I was not able to remove my excluders as usual, due to the fact that an exceptionally heavy flow from the orange began before the brood-chambers were filled with brood. At this date (March 29) I am taking full combs of nectar from the brood-chambers and supplying foundation as a means of getting the brood-chambers filled with brood. The queens will lay in the foundation combs as fast as it is drawn out sufficient, while empty combs would be filled with honey within a few days. Out of the orange district, the plan I gave would doubtless work well this season.

\* \* \*

Spring inspection of my Tremont apiary revealed four cases of foul brood—two of American and two of European. One noteworthy feature of the American is that it adjoins the stand where one colony was destroyed last spring, but this time there are two standing in the same row, on stands adjoining where the one was destroyed. One is an immense heavy colony, but has a very bad case. It will be shaken a little later. The others have already gone by the sulphur route.

The two cases of the European are the first of the kind I have ever had, and they were quite a surprise to me. Both colonies are very dark in color, one not being re-queened last summer. A very peculiar circumstance in connection with the other colony is that there are two colonies being carried over winter in a two-story hive with screen wire as the only division between them, the upper one having a separate entrance. Both were given young queens last summer that were reared from a golden mother. The bees of the lower portion thought they could raise a queen that would suit them better than the one I gave them, so they did. It is this portion that has the disease, while those above the screen are as healthy and strong as one could want a colony at this time of year. Fortunately I have anticipated just such trouble, and have very few colonies that are of low-grade stock. It seems to me that if anything is proven by the double colony it is that good stock is a factor in fighting European foul brood, regardless of the contention of some of our expert authorities that it is not. It appears to me that only one good stock has the vigor necessary.



J. E. Crane

## SIFTINGS

Middlebury, Vt.



That Backlot Buzzer, p. 167, is still in trouble — just like some beekeepers I have known.

\* \* \*

Dr. Miller drops a Straw on windbreaks, p. 139, Feb. 15. I believe he is right—quite right. Let us remember.

\* \* \*

Thank you, Mr. Editor, for the suggestion on page 134, Feb. 15, about leaving out entirely that "flimsy following-board." I am sure many beekeepers as well as inspectors will rise up to bless you.

\* \* \*

Page 147, Feb. 15, Arthur C. Miller tells us that golden Italians are not Italians at all. What a misnomer! I wonder some one had not found that out before. I believe our friend must sit up nights thinking.

\* \* \*

The earth is covered at this time, March 18, with about two feet of snow, with a good deal of zero weather in this vicinity. It looks now as tho it might be a late cold spring, and perhaps a good deal of spring dwindling. At present, however, bees seem to be in good condition.

\* \* \*

Mr. P. C. Chadwick says, page 149. "It was pretty well agreed by inspectors at the state meet that the symptoms of all kinds of brood diseases converge until it is a very difficult matter, in many instances, to tell just what the disease may be." They are quite correct. Then is the time to send a sample to Washington, Department of Agriculture, to decide.

\* \* \*

The question of the number of hives of bees to the acre in an apple-orchard or orange-grove is discussed by the editor on page 92, Feb. 1, and is one of great importance. It has been proved beyond a doubt in northern Vermont that it pays to place eight or ten colonies of bees to the acre in a cold cloudy time of bloom—a colony for each four or five trees.

\* \* \*

Charles McCulloch, in the market reports for March 1, says, "Lower prices have stimulated the demand for honey, and it looks now as tho the market will be well cleaned up, and no stock to carry over," while Mr. Byer, Mr. Phillips, and P. C. Chadwick are discussing the question of overproduction, page 184, March 1. Now, it seems to me a case of underconsumption rather than over-

production. Lower prices will usually stimulate the demand, but demand will be small when prices are too high.

\* \* \*

Our friend Doolittle, page 98, Feb. 1, gives us advice as to liquefying granulated honey, which is decidedly sound. The whole subject is one of ever increasing interest. Why should some honey granulate sooner than others? and why should some kinds stand a higher temperature without injury than others? Why has comb honey granulated more readily during the last two years than formerly?

\* \* \*

This time Mr. Frank McNay, of Pasadena, would prophesy, page 175, March 1, "If the ground freezes wet, there will be honey! if it freezes dry, there will be no honey." I also will prophesy. If the ground freezes wet, if the ground is covered with snow during the winter, if we have no fields of ice on meadow or pasture, if the bees winter well, if April is mild so bees can breed strong early, if apple-bloom and dandelion yield freely, if May and June are wet, if we have no long cold rainstorms during clover bloom, if clover bloom yields nectar freely, and bees do not swarm too much, we shall certainly have a good season; but I believe one of A. I. Root's speckled buttercup biddies is wise enough not to prophesy until an egg has happened.

\* \* \*

We here in Vermont are in the midst of a lively campaign for state-wide prohibition. I have been astonished at the amount of money expended by the liquor interests for local option as a temperance measure. "When the Devil was sick the Devil a saint would be," and they would have us believe that untold evil will follow if the forty odd saloons in Vermont should be forced out of business. No alcohol for sickness, no wine for communion purposes! how dreadful! They have not yet learned that unfermented grape juice is used by most churches at the present time. Maine and Kansas are represented as fast going to the dogs in consequence of prohibition laws.

Later.—I am sorry to report that our state has decided by some 13,000 majority to continue local option in preference to state-wide prohibition as the best method of controlling the liquor traffic. We must still be kept in the A B C class until we can better learn our lesson, that the children of this world are wiser in their generation than the children of light.

# BEEKEEPING IN THE SOUTHWEST

Louis H. Scholl, New Braunfels, Texas



A long dry spell has been pretty general thruout the great Southwest. There was very little fall and winter rain, so beneficial for the early honey-yielding vegetation. The winter has been an unusually warm and open one, with little very cold weather. Bees have been reported in good condition. Altho drouthy conditions prevail, and there is but little indication now for any rains, prospects are bright enough. If there are no late freezes some early honey may be obtained. The mesquite is especially promising with an abundance of buds—so far advanced, indeed, that it will come into bloom before the end of March.

But "there's many a slip 'twixt cup and lip," and cold weather might give quite disastrous results. It would do considerable harm to the bees by directly affecting the colonies in their advanced stage of development as well as cutting off the sources of nectar and pollen. With continued warm weather, indications are for much super work thruout the mesquite, huajilla, and catclaw sections.

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A visit from Mr. and Mrs. C. P. Dadant, on March 16, was indeed an enjoyable one. The time was only too short. There were numerous apicultural topics for discussion, but many more did not even get out of the "question-box." These good people were accompanied on their visit by Mr. and Mrs. E. G. LeSturgeon, of San Antonio. It is useless for me to begin to enumerate the subjects of most importance that came up at this "beekeepers' meeting" in which the ladies took as much interest as the men folks. It so happens that each one of the better halves is a real partner to her husband, which accounts for their interest in the discussions. Our welcome to such visitors is extended indefinitely. Such discussion usually brings out new ideas and re-vives many old ones that have been permitted to go into a dormant stage. In other words, "it helps to make better beekeepers out of any of us." That is why I have continually harped on the subject of beekeepers getting together more by visits, beekeepers' meetings, field days, and beekeepers' picnics.

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## PREPARING OUR COMB-HONEY SUPERS.

It will require about 3000 shallow-frame supers this year in which to harvest our

comb-honey crop besides 1500 or more shallow extracting-supers for extracted honey. While the latter are left on the hives thruout the winter, and the greater part of the year, the comb-honey supers remain on the hives only long enough to become filled and the honey thoroly ripened. After the honey has been cut out of the frames, these scraped clean, and properly replaced in the supers, they are stacked up in huge piles and covered from the weather. In the early spring begins the work of filling them with foundation, work now in progress for the earlier honey-flows.

## THIN SUPER FOUNDATION IS USED.

Thin super foundation in full sheets is put in the frames with melted beeswax. Altho this has been mentioned by me a great number of times, questions continue to come from every part of the country on this subject. A frame-rack holding three frames and containing spacing-boards to guide the sheets of foundation to the center of the top-bars is used. Common table-spoons, with usually the lips of the front end of the spoons hammered together slightly to direct better the flowing wax, have been found to be the cheapest and best for the work. The wax is heated in a large stew-pot containing some water, either on a charecoal furnace or gasoline-stove.

## IT IS MERE CHILD'S PLAY.

Children do almost all of this work for us now as against grownups of former days. They are better adapted for this kind of work on account of their nimbleness and quickness. The work is light and becomes more difficult for clumsy hands to do. It is especially advisable and essential that this work be done during the earlier and cooler part of the days in the summer on account of the tendency of the thin foundation to become soft and rather difficult to handle. Thus the children can put in good time for several hours in the mornings and earn quite a little amount of pin money. It affords us an opportunity to employ so many more nimble hands at a time of day when the work can best be done. They enjoy it too, even to our own little four-year-old tot who, by the way, helps every morning, of her own accord entirely, of course, to remove the paper from between the foundation sheets, and lay it within reach of others who put it into the frames.



# CONVERSATIONS WITH DOOLITTLE

At Borodino, New York.



BEES AND APPLE-BLOSSOMS.

"I live in a locality where there are many orchards of apple-trees. What relation do these trees bear to our friends the bees, in having them in shape so that they can, by the 'great army of workers' produced thru the stimulation of apple-bloom, gather for us the tons of honey from the white clover and basswood?"

Thus writes a correspondent. In reply I would say that nothing in the line of early honey so stimulates early brood-rearing as does that which comes from the pink and white blossoms of the apple-trees. In fact, it has always been a proverb in this section of the country, "As goes apple-bloom, so goes the season," as to honey. More than half a century ago the hand of that most noted beekeeper, Moses Quinby, of St. Johnsville, New York, penned these words: "In good weather, a gain of 20 pounds is sometimes added to the hive during the period of apple-blossoms. But we are seldom fortunate enough to have continuous good weather, as it is often rainy, cloudy, cool, or windy, all of which are very detrimental. A frost will sometimes destroy all, and the gain of our bees is reversed; that is, their stores are lighter at the end than at the beginning of this season of flowers. Yet this season often decides the prosperity of the bees for the summer. If there is good weather now, we expect our first swarms about June 1. If not, no subsequent yield of honey will make up the deficiency."

Never were truer words uttered, as applied to central New York; and what applies to this locality will apply generally to to northern states. Hence we see that the apple-tree bears no mean relation to the beekeeper. In 1877 we had the best yield of honey from apple-bloom that I ever knew; and the results from the apiary that year were the highest ever obtained by the writer, which was an average of 166 $\frac{2}{3}$  lbs. of honey, mostly comb, from each old colony in the spring. I consider the great value from apple-bloom to lie in its stimulating quality, toward plentiful brood-rearing, and in producing stores to tide over the period of scarcity which immediately follows this bloom for a time approximating two weeks. I believe that if we could have the same number of bees in the hives in apple-bloom that we do in basswood time, with equally good weather, the yield from

this source would be nearly or quite as good while the bloom lasted; but since the bloom comes so soon after cold weather, we do not have the bees; and, still worse, the weather is usually such that the bees do not have an opportunity oftener than one year out of three or four to work on the bloom more than enough to encourage brood-rearing; hence I doubt the advisability of trying to work the colonies up to an unusual strength with the hopes of securing a surplus from apple bloom.

So far I have touched only on the practical or dollar-and-cent side of this matter. However, there is still another side which we as beekeepers look after so seldom that we grow poor, and to a certain extent ugly, in our everlasting hustle after that which pours mammon into the home treasury; and we go about continually with a look on our faces which says to every passerby, "Time is money." He who sees in the bees, the apple-blossoms, and the ripened fruit, only that which shall put money into his pocket, lives in a poor half-furnished house. He who obtains from them only what he can sell, gathers but a meager crop. If I can find something besides dollars and cents with my bees or on apple-trees, shall I not take it? Apple-trees, during each year, are like some people we know. In their young and blossoming days they are sweet and pink-hued, and then they grow acid, pale, and hard; but in the ripened experience of later life they may become sweet again, and more enchanting by their ministering to the calls of humanity. So if any of us have become acid, pale, and hard, in our eager grasping after the "almighty dollar" which may come from the bees and apple-trees, let us once more return to the joy and sweetness we had in the springtime of life which may again come into our lives as the deep richness of color comes to the ripened fruit of the apple-trees of autumn. If we have allowed our grasping disposition to get the better of our inner being, something as apples led to the loss of Paradise, is it not about time we begin to reconstruct a bit of Eden by once more listening to that better nature which will, if we will let it, lead us once more under the blossom-laden boughs, made pleasant with their perfume and the joyful hum of the bees? Nature might have contented herself by allowing the apple-trees to bear seeds only; but she accompanied such prosaic action with fragrant flowers and delicious fruit.



E. G. Baldwin

## FLORIDA SUNSHINE

Deland, Fla.

## FOREWORD.

When Editor Root admitted that there might be "room for one more" in the ever-widening columns of GLEANINGS' departmental staff, a new hope was quick to leap in my heart—the hope that fair Florida might be the fortunate one to secure representation among her sister states.

I need not try to tell you, ye editors many and capable, how glad I am to see that hope being fulfilled.

I have felt for several years past that this big southeastern peninsula—the one big peninsula of our Union—deserved more magazine space, possibly, than had heretofore been accorded her. I felt that Editor Root had made a notable advance toward nation-wide apiculture when he reached out hands across the northern border to our brothers and sisters in Canada; when he widened the circle from central to middle West, and then to the great West, until he could see the sun set in the Golden Gate. But my longing eyes missed something. When first I heard the sweet humming of the Dixie Bee I felt like lifting a glad cry. From Medina to Nashville is a long stride; but I felt that this, tho profoundly a step in the right direction, was still only a beginning; for how immense is the territory south of Tennessee and east of the 82d parallel, the line that runs thru eastern Ohio, clips off the eastern tip of Tennessee, and then cuts straight down thru the heart of Florida! Now swing the compass that reaches from Medina to Nashville, "away down south" still further into Dixie, and you barely reach our Jacksonville.

The recent and systematic study of bee-keeping conditions in the great Southeast, begun under the direction of Dr. Phillips, only increased my conviction that now was "the psychological moment" to extend still further into the Southland the radii of America's most representative bee-journal—to make it, in this detail at least, more completely representative.

It is in this spirit of glad service, therefore, that I have undertaken the responsibility of special contributor from this particular region of our great Union. Read the telling chapter, "Regional Differences in the United States" in Dr. Phillips' new work, "Beekeeping," and I am sure you all will agree with me that no one contributor can speak authoritatively for all regions.

In the orange-honey belt, which extends from about the 30th parallel of latitude to the Southern Keys, the bloom on all citrus

trees this year seems about the poorest since the "freeze" of '99. A letter from my friend Reynolds, near Fort Myers, on the west coast, says "Orange-bloom a total failure." A like card from Mr. Harry Hewitt, of Apopka, reads, "Only a light bloom." On the east coast it is the same story; and here at Deland on the St. Johns the bloom is the "sorriest" I have known in 16 years. Bees have built up splendidly on it, however, and the hives, light at first, are now heavy with brood, bees, and honey—but little or no surplus. The bees are still working fairly well early and late, but lie off in the heat of the day, showing that the flow is gradually coming to a close. My hive on scales has just about held its own since the first of March, in weight; but it is much stronger in bees than then. It was not a fair representation of the average colony, however. This year only the very cream, the very pick of the prime colonies, stored any surplus from orange.

We cannot complain, however, for of the previous three years one was fair and the other two extra fine for orange honey. It is safe to add that every blossom was visited by many bees this season—no danger of scanty cross-fertilization, for the blossoms were so few and scattering that there would often be two bees trying to get into the same blossom at the same time! Reports so far received from the pennyroyal-honey-section states show that there is a fair crop of that choice article, tho not so good as last year. We have not yet a full report from the tupelo section. The next main source will be the scrub palmetto, then the cabbage palmetto, and mangrove, pennyroyal being the first in point of time.

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#### Best Yields when the Bees are Close to the Source.

P. C. Chadwick thinks the bees are to blame if they do not go over 1½ miles for nectar, page 149, Feb. 15. On page 145 J. E. Crane speaks of scattering bees thru the orchard for better results. If bees go long distances, why is it that they show so much better results close to the bloom? Large orange-growers here in Florida scatter the bees, and they get better fruit close to the bees.

I can show Mr. Chadwick locations here, 1¼ miles from mangrove or orange, where bees will starve, altho, close by the bloom, they can get a large yield. I have tried it, and not at one location either.

Sanford, Fla., March 25. C. H. Clute.

# GENERAL CORRESPONDENCE

## HOW TO DO AND HOW NOT TO DO; CLIPPING QUEENS

BY R. F. HOLTERMANN

When a beekeeper has only a few queens to clip, it is not a matter of very great importance when the clipping is done. For instance, if hundreds of queens require to be clipped it may not be advisable to wait until fruit-bloom to do it, because, with probably unfavorable days there may not be sufficient time to clip them all, and in that case I would begin to clip at any time when the bees are gathering pollen and nectar freely. No reason has ever been given, so far as I know, why it is more injurious or risky to clip a queen during the time of, say, maple-bloom in comparison to apple-bloom; and after having clipped thousands of queens any time warm enough for the bees to gather pollen and honey, during a time ranging from early willow to clover and beyond, I have not been able to discover any difference in results. The longer a beginner waits after spring opens to hunt the queen in a normal colony, the stronger the colony will be, and the more difficult it is to detect a queen.

Before a beginner undertakes to clip a queen, or even find her, I take it for granted that he will have studied in literature the appearance of a queen on the comb, and have in his mind's eye just about what a queen will look like. If the operator has never seen a living queen, it is quite an undertaking for him to find her, and I should be disposed to advise setting an empty hive in front of the old hive, with its entrance toward the old hive. Upon this, place a super, with a queen-excluder tacked to the bottom of it. Upon shaking the bees into this super from the combs in the hive in which the queen is to be found, and finally dumping the bees which remain in the old hive into the super, the bees will soon work their way thru the queen-excluder and thru the entrance of the new hive back to their brood and hive. In this they can be gently driven with smoke. The worker bees can go thru the queen-excluder, but the drones (if any) and the queen cannot. In this way a queen should be readily found. I look into this super after shaking each comb, or even glance over the combs before shaking it, and frequently find her before having half shaken the combs; but it is not well to spend much time over this.

Difficult as it may be for a beginner who is not a keen observer to find a queen the

first time, it is still more difficult to catch and clip her. There are generally other bees about her that might sting. Let them sting. Under the finger-nail is a splendid place to be inoculated. But we are also genuinely afraid we might injure the queen. This latter is, I believe, true of every beginner.

I shall take it for granted that the operator knows the difference between the head, thorax, and abdomen of a queen. Some queens are much more disposed to take wing than others. Young queens are also much more likely to fly than older queens. Where a queen appears to be light-footed, and tries to run about the comb and over other bees, even moving her wings, be careful. She has escape in mind; and if one is not careful she may take wing any moment; and if she does I would not give much for the chance of recovering her. If you want to make reasonably sure that she will fly, chase her with your thumb and finger, or blow a little smoke on her. If the queen does take wing, keep yourself and the comb in the position in which you were when she flew, but the chances are she was too excited, when she took wing, to locate herself. After holding a comb ten minutes, looking for the return of the queen, I would not wait any longer.

I have noticed students giving sharp puffs of smoke with the object of separating worker bees and queen. This is bad practice, as it tends to make a queen take wing. The least likely place for a queen to take wing is when she is quiet and her feet are on the comb. That is a place and attitude where she can be picked up by the beekeeper with the least danger.

A queen should never be picked up by the abdomen, as that is the most easily injured part of the body. Many of us have seen dents in the abdomen of a queen, just as we have seen a dent in a tin pail. This was the result of outside pressure, and it never came out. Such a queen is generally superseded. The queen must not, then, be grasped by the abdomen; but a queen can safely be grasped by the thorax.

Some advise practicing clipping by taking drones. If a beginner can first see some one else clipping queens it is quite a help.

Holding the queen between the thumb and finger may be a long way from having her in such a position that one can clip her



wing or wings, without taking some other portion of her body, particularly a leg. Queens are adepts at getting their feet against the finger and trying to pry themselves loose; and if they cannot pry against something under them, which is away from their wings, they will try to do it against something above them, where the wings are to be cut. To be safe when I clip, I like to let the queen rest on my knee, holding her by the thorax from above. When that is done she pries against the knee, and there is no danger of cutting a leg off when clipping. The same can be effected by holding her with one finger under and another above her; but this method is less certain. I like to advise the cautious way. Some beginners chase a queen across a comb with a pair of scissors, making a lunge at her wings—a method of which I never made a success. I clip the wings on both sides; others clip one each year, using the markings as a record.

If a beginner wants to find a queen without shaking and combing the bees thru a queen-excluder the following rules should be observed:

1. Do not jar the hive in which you are about to hunt the queen.

2. Smoke the bees very gently, giving no sharp puffs.

3. Take the combs out as quietly as possible, and look them over intently and fairly rapidly, not forgetting corners or openings between the comb and frame. Set the combs, after examination, outside of the hive until all have been removed or until

the queen has been found. Do not forget to look among the bees left in the hive. With black bees, not Carniolans, she will quite often be found off the combs.

4. If the queen has not been found after trying the above I would recommend looking them over one by one and replacing them in the hive, and, if not found, then leaving the work for another time. My reason for advising the latter is because by that time the bees will have assumed abnormal positions, getting into clusters, etc., in the hive or on the combs, and then it is more difficult to find the queen.

5. When hunting for a queen, do not talk about other things; do not think about other things, but do as a writer somewhere once said—say "Queen, queen, queen," mentally, all the time. In other words, keep your mind on the object of your search, and then you are most likely to find her.

6. Perhaps this should come first of all. If the hive has a honey-board and a beespace above the frames, you can try giving the colony a fairly sharp smoke, say covering about a minute, and you may find the queen on the under side of the honey-board. This is more likely to be the case with black bees.

7. Never try to clip a queen when the bees are likely to rob. Do not try to find her at such a time. Some of us have to do the latter, but it is not work suitable for a novice. If done, do it as nearly at the close of the day as possible, but not after the shades of night are falling.

Brantford, Ont., Can.

## AN UNPRECEDENTED SEASON

BY G. C. GREINER

The past season, unquestionably, goes on record as the best honey season beekeepers of the present generation ever experienced in this locality; and, as nearly as I can judge from reports I have received, other parts of the state were favored in a similar manner.

On page 748, Sept. 15, Mr. J. E. Crane refers to Quinby's book, saying, "Clover will sometimes continue to bloom all summer and yield honey." Then he adds, "Such a season was 1865, as I remember. I have been looking for another for the past fifty years, and it has come at last." That is exactly my experience, except that Mr. C. has fifty years to fall back on, while I can call an experience of only forty years my own. If I am not mistaken, the year 1887 was an uncommonly good honey season—

perhaps the best in my recollection; but it was nothing like the one just passed.

With the exception of a few days between the dandelion and alsike-clover flows, honey has been coming in continuously from the time the early spring sources, such as elm, soft maple, the early fruit trees, etc., yielded nectar, until the middle of October. All my summer's honey-house work, including extracting at the close of the white-clover flow, could be done with the doors wide open, and not a bee would offer to molest me. Even as late as the middle of September bees would improve favorable days with such uncommon display that I had occasion at different times to call members of the family to the beeyard to witness the strange spectacle.

It is not strange—yes, it would be only a



natural consequence—that such an uncommon season would also produce an uncommon honey crop; but the strange part of it is the fact that we had the wettest and seemingly the most unfavorable summer for bees to do field work in many years. Possibly an hour or two in the afternoon, or perhaps a little while in the forenoon, was all the chance they had to go to the field. The fears we entertained during the fore part of the honey-flow, that under these unfavorable conditions the season would turn into a honey failure, were dispelled by our bees. In spite of the many cold stormy days, supers were filling up right along; empty ones had to be given, and finished ones taken at short intervals, so that, by the end of the season, my comb-honey-producing colonies had averaged  $6\frac{1}{2}$  supers of finished sections. During the season I have taken from the poorest colonies six, from the better ones seven, and from two (my banner yielders) eight supers of 24 sections each.

All these colonies run for comb honey were divided swarms, or, more correctly speaking, divisions of divided swarms. The parent hives, after two combs of brood with adhering bees and the old queen had been taken, were moved to a new stand, and a young laying queen given at the time the divisions were made. The two combs of brood with the old queen and some empty combs were placed in a new hive and left on the old stand to catch the flying bees. These new swarms were run for extracted honey, and averaged between 140 and 150 lbs. each.

All my white honey brings me 20 cts. per section at retail, and 16 cts. in crate lots at the stores. Weight, to a certain limit, is not taken into consideration, all sections selling at the same price. Of course I am very careful in sorting my honey. Everything below  $13\frac{1}{2}$  oz., which I decide by eye and lifting (no scales are used), is not passed as full weight, but sold at a correspondingly low price. Darker grades, such as amber and buckwheat, are also sold for several cents less per section. I do not furnish any crates, but reserve them when sales are made. As I do all my delivering myself I have no expenses for freight or express to meet, neither do I have to let middlemen share my profits. I can not give the exact average price I receive per super; but as the larger part of my crop is white honey, and a good share of it is sold at retail, it is not far from \$4.00 per super, which would be for the average yield of  $6\frac{1}{2}$  supers, or \$26 per colony.

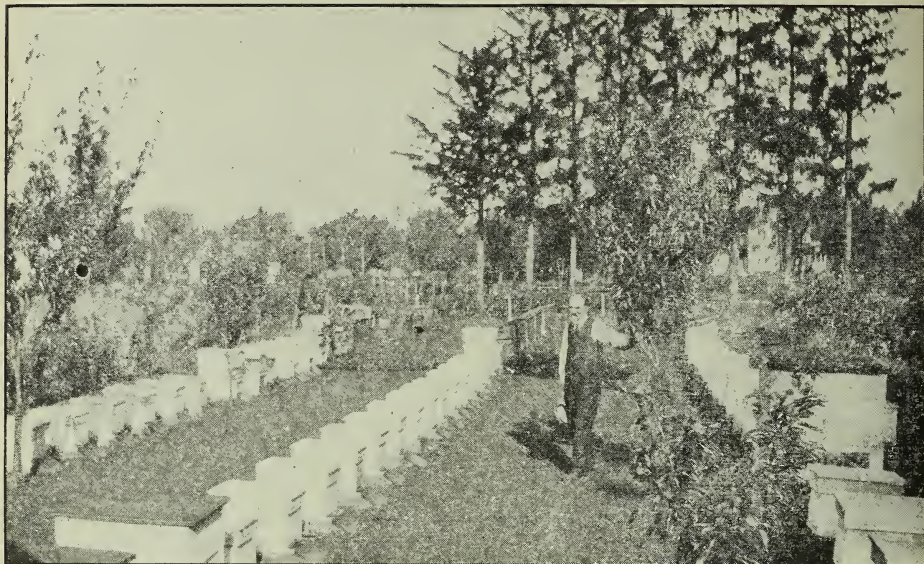
The other divisions, those with the old

queen and flying bees, have done nearly as well in number of pounds; but in extracted honey I have no data to compute their average yields in pounds and ounces; but I have some means for ascertaining their yields quite closely. Every super, every comb of honey, and every section taken from my hives, is carefully recorded on the inside cover of the hives, so that, by simply lifting the outside cover, the progress of every colony is revealed. To this my beekeeping friends from different parts of the state who have visited me at different times during my season's campaign, and have inspected my beekeeping outfit and management can testify.

As I have frequently weighed supers before and after extracting, also single combs when I felt especially interested in their weight, I can quite closely estimate the yield of a colony by consulting its record.

By far the largest share of my extracted honey, perhaps nine-tenths of my crop, is sold at retail, and nets me, when put up in pint and quart cans,  $14\frac{1}{2}$  cts., and in jelly-glasses 16 cts. The largest package, the quart can, seems to be the favorite of my customers, while the sale of the jelly-glasses is comparatively limited, and takes only a small part of my crop. The average price is, therefore, very little above the price of the larger package. But these prices are for white honey. About one-fourth of my crop is amber and buckwheat, for which I get from one to three cents less per pound. This would reduce the average price of the entire crop to about  $13\frac{1}{2}$  cts. As stated above, the yield of my colonies run for extracted honey was from 140 to 150 lbs.; and taking the medium, 145 lbs., as a fair estimate, it brings the income of these colonies to \$19.57 each; and, with the product of the comb-honey divisions added, to \$45.57, spring count.

This yield of the past season has no precedent in my forty years of beekeeping. But it is not all due to the season. It is the result of combining season and management. The method which I have adopted and successfully practiced during the last four or five years gives me, besides unusually heavy yields, other advantages that help to reduce the unpleasant work of the bee-keeper in a great measure. First in this line stands practically perfect swarm control. Every comb-honey-producing beekeeper knows by experience the deplorable sight that meets one's eyes when a colony sends out a swarm that has two or three supers well under way on their hive. This does not happen to me except in very rare cases. None of my comb-honey-producing colonies



All the supers had been removed from the hives (G. C. Greiner's apiary).

swarmed this summer, and only one of the divisions run for extracted honey swarmed normally during the white-clover flow. Later in the season I had five superseding swarms from the same divisions—those with old queens and flying bees. Two went back of their own accord, and the others I returned to their home by taking their queens away when being clustered on small trees or berry-bushes.

As my method insures me this much-desired swarm control I have no queens to clip; no queen-cells to hunt and destroy, no shaking off or running after young swarms—nothing of the kind; in fact, I have hardly opened a brood-chamber after all colonies had received their full equipment of combs at the beginning of the white-clover flow. Instead, I can spend all my time forcing the production of surplus honey, and my bees are not troubled with swarming notions, but are bent on expending all their energy in the super work.

Another advantage, and one of great importance in producing a heavy yield of surplus, is the breeding-up of a hive full of young vigorous field workers at the right time. My method brings this about.

On page 831, GLEANINGS for Oct. 15, the editor justly cautions the comb-honey producer against the use of bait sections and finishing up sections by feeding back extracted honey. From experience I can endorse every word he says, but with this proviso: "If not properly done." Both fea-

tures are an important part of my method, and are the means of my unusual surplus yields, and, in a certain way, the prevention of swarming. To produce desirable bait sections they must be drawn out and filled, taken from the hive, extracted and cleaned by the bees as soon as possible, and then stored in air and dust proof compartments until wanted. Honey produced on bait sections managed in this way is in no way inferior to any produced in the usual way. It would puzzle the honey-expert as well as the every-day consumer to detect the difference.

It is the same with feeding back to finish sections. It must be done properly. Feeding must begin before the honey-flow entirely ceases. Sections to be finished should not be off the hives any longer than is strictly necessary to prevent them becoming stale at the cell-tops, and feeding must not be allowed to suffer any break from beginning to end. If the honey to be used for this purpose has not been extracted in its green state, when still nectar, it must be diluted to about that consistency. Some of my best fancy honey, exhibited at the fair, was finished by feeding. However, from a honey-producer's standpoint I admit that both features, bait sections and feeding, are detrimental to the quality of comb honey, but not any more so than the use of full sheets of foundation.

The accompanying illustration was taken after all the hives were stripped of their



supers, except one at the lower end that was used for finish work. Supers and feeder are still on the hive. The row in the middle

contains mostly colonies that produced the unusual crop of comb honey described.

La Salle, N. Y.

## PARALYSIS AND THE ISLE OF WIGHT DISEASE; ARE THEY THE SAME?

BY F. R. BEUHNE

In the Nov. 15th issue the editor, p. 922, asks for information as to whether the bee-paralysis of Australia and of southern United States is the same as the *Nosema apis* (Isle of Wight disease) of Great Britain. This is exactly what we have been endeavoring to determine ever since the presence of the nosema parasite in Australia became known in 1909. All the evidence up to the present is negative to the proposition that the two diseases are identical.

Shortly after the discovery of the parasite, bees were obtained from 88 apiaries covering five out of the six states of the commonwealth. The parasite was found in the first 20 bees from 86 apiaries. Repeated microscopical examinations of bees from the two remaining apiaries failed to show *Nosema apis*. One of the two clean apiaries was 100 miles inland at Wangaratta. The other was the Departmental apiary at Burnley, close to the city of Melbourne. A visit I paid to the Wangaratta apiary showed that bee-paralysis was present, altho nosema could not be found. The Departmental apiary at Burnley was free from both paralysis and nosema. Queens from colonies affected with paralysis were brought from inland apiaries and introduced to several colonies at Burnley. Symptoms of paralysis appeared in from five to six weeks later. Bees from these stocks were then examined, and at intervals later by Mr. W. Laidlaw, B. Sc., Biologist of the Dept. of Agriculture, who also made all previous and subsequent microscopical examinations, but no signs of nosema could be found, even in bees which were in the final death throes of paralysis. Finally the queens were removed, also dissected, and found clean. Queens of a resistant strain were introduced in their places, and in a little over two months all signs of paralysis had disappeared. This experiment was repeated several times in succeeding seasons, and the result was exactly the same. On the other hand, *Nosema apis* was found in bees affected with paralysis when they came from apiaries in which the presence of the parasite had been proved, the degree and percentage of infection being the same, whether the colonies showed symptoms of paralysis or not. Incidentally

I may here mention that I have repeatedly effected a cure of the most pronounced cases of paralysis by exchanging the brood of the affected colony with that of a normal colony, at the same time removing the queen of the former and allowing a queen-cell of a different strain, and raised in a normal colony, to hatch and mother it. The curious thing is that, altho, as might be expected, bees continue to die for some time after the exchange of brood in the affected colony, yet none of the bees hatching from the combs of the affected stock, and given to a normal one, show any symptoms of paralysis, which seems contradictory in the face of the fact that paralysis can be produced in any colony by the introduction of the queen of an affected colony.

Reverting now to *Nosema apis* I must point out that, altho the parasite was found in 86 out of 88 apiaries, the localities from which some badly affected specimens came had never suffered any losses. The colonies showed no symptoms, and were profitable. Further, outside the two apiaries mentioned, it seemed impossible to find bees free from nosema. Even bees from trees in the forest had it, also some of the worst-affected colonies with a little judicious help recovered, and developed into prosperous and profitable stocks.

In view of all this, it did not seem advisable to adopt the drastic treatment of destruction of the bees and combs which is recommended by the British authorities. Quite early in the investigations it became evident that contributing factors were necessary for the parasite to become harmful. Considering the wide distribution revealed by the investigations, it appeared quite hopeless to attempt the total destruction of the parasite, and more advisable to try to find the contributing causes. With this object in view, queens and their escorts from hives proved to be affected with nosema were introduced to a number of colonies at the Burnley apiary. The biologist, at intervals of two and three months, examined bees from the colonies experimented with, and at no time could nosema be discovered in the bees. Becoming bolder, we next transferred 14 badly affected colonies from



inland to the Burnley apiary. These were very small, and could not have recovered without some assistance. A comb of hatching brood was therefore given to each. In three months all of them had completely recovered, and showed no trace of *nosema apis*.

In view of the success obtained, a further and somewhat larger experiment was made. In January, 1915 (which, of course, is summer here), 24 colonies were selected from an apiary 60 miles from Melbourne. Microscopical examination of bees proved all of them to be infected with *nosema*. Nineteen of these were sent to the Burnley apiary, while five were left behind as controls. In May examinations of all were again made by Dr. Laidlaw, and showed that, of the 19 shifted to Burnley, 16 were now clean, 3 were still affected, but in a lesser degree than in January. The 5 controls still retained the parasite.

Owing to much brood-rearing without an income of nectar it became necessary to feed the 19 colonies in May. Fifteen were given sugar syrup, and four some dark honey of unknown origin obtained in the open market. In spring (September) the examination made showed that three out of the four which had been fed honey were rather badly affected, and only one of the sugar-fed, slightly. Of the controls, two

succumbed during winter, but the remaining three were now clean.

The fact that three out of the four colonies (which were clean at the previous examination) became infected after being fed honey (which possibly came from old brood-combs), that one, altho given exactly the same, remained free, opens up several new issues for further investigation.

The infection of one of the sugar-fed colonies may be accounted for by robbing, of which a little took place at the time.

That the surviving control colonies rid themselves of the parasite may indicate that, under the stimulus of a plentiful supply of good pollen and new nectar, bees are able to throw off the disease in spring. This also applies to the Burnley apiary, where, owing to its location among artificially watered flower-gardens, and the vicinity of the river, there is never a dearth of normal pollen. Nothing is finally proved by the experiments, and I have departed from the rule to publish nothing that is not complete, only with the object of indicating the directions in which a solution of some of our troubles may be looked for, which I take to be the inherited vigor of the strain of bees together with a plentiful supply of good nitrogenous food during the period of their infancy.

Tooborac, Vic., Australia.

## THE NEW BEE DISEASE; MORE LIGHT WANTED

BY GEO. W. BULLAMORE

A few years ago I found it necessary to read thru the descriptions of the Isle of Wight disease written by thousands of the beekeepers of this country who had suffered losses. I soon found that, with regard to the symptoms, the definite statements of any one beekeeper were usually at variance with the recorded experience of some other beekeeper, and that the only point on which all writers were in agreement was that there had been a heavy loss of bees. I am reminded of this when reading the accounts in GLEANINGS of "that Western bee-disease." While some are claiming that the disease disappears as the result of the sulphur treatment, another states that the cures are apparent only, and the bees dwindle away and eventually die out. One writer does not think the weather has anything to do with it. To others, weather is the chief or only cause. Some speak of it as a form of paralysis, a disease known to attack the adult bees only, while other accounts mention the rotting brood. A constant feature

of the reports is the crawling bees. This was the case at first in the descriptions of Isle of Wight disease in England; but a careful study of the course of the trouble in districts and apiaries for a year or more convinced us that a symptom of this nature was associated with the dwindling of stocks without sign of dying bees, and also with abnormal winter losses when the bees were found dead in heaps on the floorboard. Whether a sick bee dies inside the hive, in front of it, or away at the pasturage, probably depends on a number of factors of which the organism causing the trouble is but one.

A good account of a trouble which we should diagnose as Isle of Wight disease is given by Critchlow in GLEANINGS for 1904, page 692. The loss of several thousand colonies in Cache Valley and Salt Lake Valley is described. Other accounts are given by Bedell, 1909, page 412, where losses in New York State are recorded, and by Fawell, 1909, page 704, who tells of heavy

losses in Ontario. An interesting statement was also made by James Heddon when discussing the question of wintering at a meeting of Michigan beekeepers on December 1, 1875. He attributed the heavy losses in Michigan to an *intestinal disease*, and said, "In the winter of 1871 two of my neighbors had 65 and 85 stocks respectively. In the following spring they had but one apiece left. All the other bees kept in the vicinity died." We are but too well acquainted with this form of loss in districts where Isle of Wight disease gets a footing.

It should be borne in mind, when comparing the English with the American disease, that our observations in England are made chiefly upon bees in which the native black predominates. On the other hand, many of the American descriptions refer to losses which have taken place in apiaries where the bees are pure Italian, or nearly so. We know, too, that the Isle of Wight disease varies considerably in accordance with weather conditions, so that the double factors of race and climate are bound to affect the American manifestations of nosema disease. In regard to weather, so far as can be traced, epidemics of bee-disease in this country have always been correlated to wet seasons. The epidemics of 1782-'3, and 1860-'3, were associated with wet summers, and an outbreak of paralysis occurred during a long run of wet years which terminated in 1883. Bees do well here at times, owing to the fact that our climate consists of long irregular spells in which dry years predominate, alternating with spells in which wet years predominate. We are now in one of the wet cycles. Rainy springs and autumns aid in the spread of parasites, probably because for breeding purposes the bees carry in so much water from the paths and foliage in the vicinity of the hives. When intestinal disease is present this may be grossly contaminated with infected excrement. Indirectly, too, wet and cold weather may act by influencing the quality and quantity of the food, and by lowering the resistance of the bee to disease.

The American reports often suggest adverse weather conditions as being a factor in outbreaks. The probability is that most bee diseases, and particularly those in which the causal organism is to be found in the intestine of the adult bee, are rendered worse by the occurrence of wet and cold weather.

The nosema organism is reported to be present in the bees of the United States; and as this organism is associated with Isle of Wight disease in this country I have very little doubt that it is at the root of some of

the trouble in America. The newspaper cutting from the *Seattle Times* reads like Isle of Wight disease; but when we read the description of the same trouble as given by M. Y. Calcutt (1915, page 714) we find that rotting brood is a prominent feature of the outbreak. Confirmation of the brood trouble as a symptom is given by P. C. Chadwick in his description of the California outbreak. A. L. Hartl, Texas, page 21, adds the interesting detail that in his case the dead brood was diagnosed as sac brood at Washington. Rotting brood was certainly not a feature of the disease on the Isle of Wight and in other districts that came to my notice. I have handled hundreds of combs of diseased stocks, but have never found any great proportion of them to contain rotting brood, certainly not more than would be affected with foul brood when Isle of Wight disease was not present. In the majority the brood presents a perfectly healthy appearance, and, if transferred in time, will hatch in other hives. In warm weather I have seen brood hatching in a hive from which all the adult bees had disappeared, and on one occasion I took some sealed brood from a moribund hive and hatched it in an incubator for purposes of study. This is the appearance of Isle of Wight brood *as I know it*, and it is, therefore, difficult for me to reconcile it with the accounts of the western disease.

I am reminded, however, that about 1890 an epidemic which attacked both brood and bees was raging in Italy. Investigations were commenced, and Professor Canestrini isolated a bacillus of the megatherium type. I believe that he failed to establish its pathogenicity, and nothing more seems to have been heard of the disease. Have the West rediscovered it?

If it is correct that Professor Kincaid has discovered spores in the heads of the bees we should expect to find that the glands were diseased. The poisonous products of microbic activity (toxins) might be fed with the gland secretions to the larvæ, and the result would be that the larvæ would die. Under the microscope the dead larvæ would resemble those killed by the filterable virus of sac brood. Personally I have never met with such a condition in any examinations I have made, but have always borne in mind the possibility of its occurrence.

In the present state of our knowledge, or at any rate until it is certain that all the losses in America are accompanied by rotting brood, it is advisable to retain an open mind as to the relationship of the western disease to the English malady, which appear to be directly fatal to the adult bees



only. There can be little doubt, however, that sometimes the heavy losses in America are due to genuine Isle of Wight disease, and therefore some account of the effects of treatment may prove helpful. In the con-

quest of disease every failure narrows the field to be covered, and the lesson gained may direct others to the path which leads to success.

Albury, England.

## AN EASILY CONSTRUCTED ELECTRIC WIRE-IMBEDDER

BY E. L. SECHRIST

The electric foundation-imbedder that I am using is easily made from odds and ends, and therefore it costs almost nothing.

For electricity to heat the wires I use the regular lighting current, running it first thru a common electric flatiron, which, after some experimenting, was found to provide just the right amount of "resistance."

To convey the current to the wire I use what I call the goose-neck made of two pieces of heavy insulated copper wire, the ends of which are flattened into wide chisel points at the end where they are to come in contact with the wire of the frame. Pressing on the treadle beneath brings these copper wires down in contact with the wire of the frame long enough to heat the wire to the desired point.

The peculiar form on which the frame is placed to do the imbedding is the result

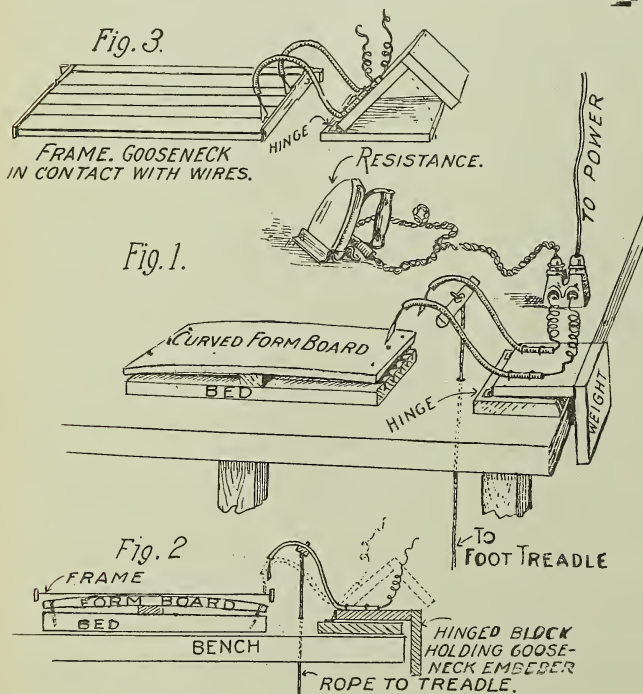
of considerable experimenting. It is a 3-16-inch board of a size to fit loosely inside a frame. As shown, a  $\frac{1}{4}$ -inch cleat is placed under the center while the ends are nailed to the board beneath. This makes an easy curve. The edges are all rounded off, and the form is blocked up from the table enough to make it convenient.

The sheet of foundation is fastened in the top-bar by any method, and the frame placed on the form with the wires on top of the foundation. The advantage over other imbedders is that both hands, not one only, may be used to adjust things and bring the wires into close contact with the foundation in case of any irregularity. When all is ready, press the treadle until the goosenecks touch the wires on the inside of the frame, just where they go thru to be fastened by the tacks. As soon as the points

are in contact with the wires it is a delight to see that wire sink down to the midrib of the foundation all over the sheet, while the cell walls close up behind it, imbedding it so solidly that it cannot come out.

As soon as the wire is imbedded to suit you, remove pressure from the foot lever. The connection is broken, and both hands remain in place on the frame holding the wire in place until it cools. All this takes only an instant, and the imbedding is done more perfectly than I can do it by using only one hand to hold the frame in place while the other hand operates the electric connections.

Fairoaks, Cal.



## HOW THE BEES HELPED TO PRODUCE A RECORD CROP OF APPLES

BY GEORGE H. WEST

I want to tell something about the pollinating of the fruit-bloom in my orchard in the spring of 1911, as the crop I had that year (amounting to over \$11,000) was the greatest the orchard ever yielded.

There are some twenty-eight acres of bearing apples on this forty-acre square, the rest being largely in alfalfa located in the southeast corner. In 1909 and 1910 also I had good crops from the orchard as I had plenty of bees on the alfalfa ground. The winter of 1910 was severe, and the owner of the bees lost most of them. Very early in the spring, having bought land about a mile northeast of the orchards, he removed to his own land the bees he had left.

On going into the orchards about May 1 I was startled by hearing no bees among

night to a location in the northwest corner of my orchard. This location was chosen for two reasons. First, Winesaps, of which there were twenty-two acres, are rather poor pollenizers, but are very receptive to the pollen of other apple-trees; and the Ben Davis, Missouri Pippins, Jonathans, and Ganos in my neighbor's orchards joining my land north and west, are all good pollen-bearers. Second, our prevailing winds are from the northwest and west; and as we have many high winds I believed the bees would work better from that location.

During the blooming period the weather was bright and warm, and two days after moving in the bees when I went over the orchard again I heard the humming of bees everywhere.

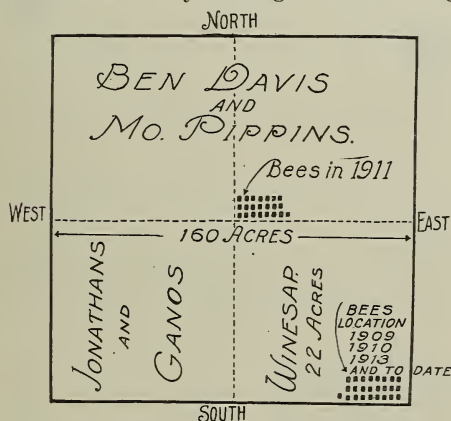
After the blooming period, and when we began spraying, the owner removed the bees. I never had bees as near my Winesaps as I had that year, and have never had as large a crop before nor since. The bees were about the center of the 160 acres, nearly all in apples, and my neighbors also had record crops that year.

The Winesap tree shown in the illustration\* is one of 952. In 1910 this tree yielded twenty field-boxes (bushels) of apples; and in 1911, the year this photograph was taken, and the year the bees were so close, the tree yielded thirty-six bushels in spite of the fact that the young fruit was thinned down twice. From this tree we packed thirty bushels of apples which sold for \$44.50 cash. The 952 trees averaged over seven packed boxes per tree that year, netting me over \$10 per tree.

In conclusion I wish to say that I have good pollination and plenty of bloom every year; and, except for the hazards of the winter and spring freezes, and damage by hail, I should have good apple crops every year.

Colorado Springs, Col.

\* Cover engraving of this issue.—Ed.



the blossoms which were just opening. I went carefully over the whole orchard and some others adjoining it, but there was silence everywhere instead of the usual humming of the bees. I became alarmed, for I knew that, if there were no bees, there would be no apples. Altho the loss in bees the winter before had been serious, as I have said, by some effort I secured twenty vigorous colonies and had them moved that

## SUBURBAN BEEKEEPING

BY J. H. DONAHEY

[Mr. Donahey, as our readers know, is the cartoonist of the *Cleveland Plain Dealer*, whose clever work attracts attention from all parts of the country. He was a beekeeper before we became acquainted with him, and it was the occasional beehive in his cartoons that made us suspect that he knew something about bees. He is the originator, of course, of the Backlot Buzzer.—Ed.]

I am sending you a few snapshots taken in my small suburban beeyard. It overlooks a ravine, and is on a timbered hill sloping

to the east, and was utilized as the only available place where the hives could be located. Running thru the valley is a small

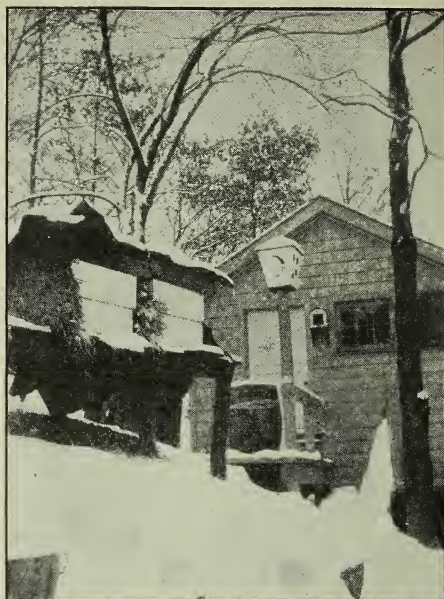




The hives are located on a hillside, the only available spot in the lot. The scaffold keeps the hives from the wash of the hill, and permits easy handling from the rear.

stream where the bees go in the springtime to get their first drink.

The hives rest on platforms built on the side of the hill, and are two or three feet high and operated comfortably from the rear, where steps are arranged to get up



The beehouse with a root cellar underneath is a fine place for a city man to spend a rainy day.

and down the hill. The high scaffolds prevent the wash from the rain from damaging the hive.

Walks lead to the beehouse where the material is kept, and many pleasant hours of education and amusement are spent there every year. Underneath the building is a

root-cellar, a luxury for a city-dweller; and between the whiffs of pippins in the winter and the delightful half-hours sitting in the shade on the porch watching the bees scurry in and out during a honey-flow, the man who spends his working hours in a great city finds it a rare pleasure indeed.

The children who come to learn of the bees have been told that the building is a "grouch" house. They have sought high and low, from roof to root-cellar, and under the porch, but never a "grouch" can they find. I always tell



Below the beehouse there is a stream where the workers gather for water in the springtime. To sit on this porch and watch them rush in and out of their homes during a honey-flow is a privilege that few city men can enjoy.

them that it is there when I am there, which leads to questions, and sometimes I almost have to confess.

"Tony," who works around the yard and the garden, slept for a time in the "grouch" house. His cot was directly under a skylight and near an observation hive, which we had arranged inside the building, permitting the bees to enter thru a small box from the outside. For some reason or other, probably from the settling of the building, the box slipped loose from the wall, and

many of the bees flew up and tried to get out thru the skylight, and, failing, dropped down on Tony's bed. It was dark when he came in that night, and, being tired, he did not light the lamp; and, undressing, he hopped right into bed, and straightway he hopped right out again. It was three miles to the place where his people lived, but he was back at seven in the morning, ready to go to work, but in appearance he was not quite the same Tony.

Cleveland, Ohio.

## THE GOLDENS VS. THE LEATHER-COLORED ITALIANS

### Have the Criticisms of the Goldens been Too Severe?

BY M. E. BALLARD

[In the following few pages we are presenting the discussion promised in the editorial, page 217, March 15. Since some have felt that GLEANINGS has not given the goldens a fair chance, we are publishing here practically all the letters we have received favoring the goldens. Furthermore, and because the experience was limited to only a few colonies, we have thought best to withhold several letters supporting Arthur C. Miller's condemnation of the goldens. In order to be fair to all, we are not publishing the names of the breeders who have contributed the four articles marked "By Breeder." We believe that all the breeders of golden Italians who advertise in GLEANINGS are thoroughly reliable. Our own view of the whole question is fully set forth in the editorial above mentioned.—Ed.]

Mr. A. C. Miller, p. 116, Feb. 15, cites a series of cases of improper acts which are credited to the goldens. In case 1 the bees failed to select larvæ of the proper age to raise a queen. Will not black bees or leather-colored Italians do the same thing?

Case 2. This combination is wholly unnatural. Mr. Miller had, in that nucleus, bees from two different colonies. The bees which were on the frame of brood with the two queen-cells were in need of a queen, or otherwise there would have been no queen-cells on the comb; and as these bees were united with the nucleus they failed to unite properly—at least failed to recognize this strange virgin queen—and continued to build and draw out the cells on their original comb. That is strictly in accordance with nature; and who would expect bees to do otherwise?

Case 3, while rather peculiar, I think needs some correction, for at that stage it would be difficult to determine just when those laying workers began laying. Nevertheless, since the hive was for a time queenless, and working bees had thrust upon their organs the task of producing eggs, what should we expect those laying workers to do with those eggs when developed? Perhaps Mr. Miller will say they should have gone out on the alighting-board and dropped them in the grass.

Case 4 illustrates their "bad temper," and this I consider too unreasonable to comment on; but I should like to ask if there was any robbing going on.

Mr. Miller also states that "true pure leather Italians" are extinct, so far as he can find. I am wondering if they ever existed. Did any one ever see a colony of "pure Italians" without a yellow trace in their makeup?

Mr. S. H. Burton also condemns the goldens. He does not explain why; but from what he writes we take it for granted that the reason is because his bees came near starving to death. This throws no light on the subject unless Mr. Burton had a percentage of leather-colored Italians, and made comparisons which he fails to state. There were bees that did actually starve to death in this locality under similar conditions in June, blacks as well as Italians; so is that any reason to condemn goldens? As the Caucasians excel Italians as honey-gatherers, a cross between these two should make an improvement over Italians so far as honey-gathering is concerned. Will Mr. Burton kindly inform us what breed of bees those were that went into winter quarters in the best condition?

In discussing the qualities of the goldens, will some one with experience, who is inclined to condemn them, tell us "why and what for," and not condemn them for something that is just as common among leather-colored bees and blacks?

The only doubt I have as to the efficiency of the goldens is their wintering qualities, and at present I am not prepared to say whether that is below the standard.

Roscoe, N. Y.



## IF AT FIRST YOU DON'T SUCCEED (WITH GOLDENS) TRY, TRY AGAIN

BY A. T. RODMAN

The bees of my first colony of goldens were so cross that I could do nothing with them. I killed the queen and thought I would try again some time. At this time I had a strain of bees that had the reputation of being as good as any three-banded bees in the United States.

The next spring I tried two golden queens from Arkansas. They were fine queens, and were the first to go into the supers. But about this time my neighbor put out a washing and they ran her in the house; also some little chickens were badly stung; in fact, everything that came in reach got stung. I decided to exterminate them; but how was the question. I waited till night, and then put a weak colony in their place, and put them in a secluded place. The next day the field bees returned to the old stand and were peaceable. As there were only young bees left in the hive with the golden queen I had no trouble in getting hold of her. Was I discouraged? Not at all. I still believed these were good goldens, and I ordered another queen from the East. She was not so cross, but she was not as golden as she should be, and was inclined to produce lazy bees. She was also removed in due time.

Still I was not discouraged, and commenced to look around for more goldens. I drew two more failures, but I finally secured a golden queen the equal of any queen I ever owned. Being a little afraid on account of my former experience I introduced her to a weak colony some twenty miles away. She came thru the winter stronger than any other colony. Her bees were gentle, and seemed to be fairly crazy to get into the hive with their loads of honey. I brought her home on four frames of bees and brood, and she beat everything on the place that season. I raised queens from her for two years, and am still requeening from the same stock, and expect to continue to keep on doing so long as I have bees.

Now, I don't expect to have any queens for sale this season, so this is not a ruse to get free advertising.

These bees suit me better in many ways than the three-banded. They are better hustlers, are more gentle, and keep the moths out better than the three-banded. They never produce a lot of bees that shine like a stovepipe, and seem to be deformed, having large heads and small abdomens.

Kansas City, Mo.

## IN FIVE YEARS THERE WILL BE MORE GOLDENS THAN EVER

BY H. M. MOYER

We have more golden Italians at present than we had five years ago. Why? Because they are good bees. I tested almost all the bees, including the Cyprians and Holy Lands. The Cyprians are extra good in every respect, except they are cross. I tested blacks, dark Italians, and golden Italians side by side.

I have been a practical beekeeper for some 35 years. Goldens are gentle and

fast breeders. The queens are large as well as the bees, and are good honey-gatherers. They winter well in spite of what is said against them.

Five years after this we shall have more goldens than we have today. The Feb. 15th number was too hard on them. I have no queens nor bees for sale, and hence am not interested.

Boyetown, Pa.

## GOLDENS ARE BRED BY COLOR SELECTION FROM ITALIANS

BY A BREEDER

Beyond doubt there are some strains of goldens which are practically worthless. To say about all, "they are no more Italians than an Ethiopian is a Caucasian," is simply to tell what is not true of the best strains. If Mr. Miller denies that one can breed goldens by color selection from Italians he is crazy. That is just what is the matter with many strains of goldens. They

are bred for color until that is all they are good for. There would be no cause for such criticism as Mr. Miller's if the papers prohibited advertisers making extravagant claims about their stock.

Now don't get the idea that I am a golden breeder, peevied in what I say, for I sell about six three-band queens to one of the golden.

## GOLDENS THAT ARE WORLD-BEATERS

BY A BREEDER

On page 63, Jan. 15, A. C. Miller speaks of killing 20 old queens in full colonies and smoking in a like number, all in 45 minutes. Now, I have no doubt caught and caged more queens than Mr. Miller ever saw—from one or two to one hundred a day during the queen season for the past 15 to 18 years—and I'll say right here the man who catches and cages 25 queens an hour from *nuclei* is going some; and it is an altogether different proposition finding queens in full colonies. It *might* be done once, but I have my doubts.

As to the "curse of the goldens," I have before me a letter from a man in Idaho who seems to take kindly to the "curse of the industry," as he orders 200 of them and reports 250 pounds of comb honey from a colony headed by one of these "curses." Don't you think it would be well for the industry if there were more of the "accursed" kind?

I realize that there are, no doubt, goldens that may not be all they should be; but did you ever think of the great number of three-banded bees that are in the same boat? Why don't we hear from them? For a number of years I have had goldens and three-banded bees in the same outyard, and these three-banders were as good as any in the world; and if there was any difference in the production or disposition I failed to find it.

You find some people who have a twisted conception of life and what it means, and are inclined to get out their little tack-hammer and knock everything in sight that they may have taken a childish dislike to. Now, this does them no good, and might do others harm. Personally I do not care for Caucasians, for they are not the bees for this location; but I do know they are hard to beat where you have several good flows during the season. I never knock them, because, for certain sections, they are *the* bee.

If we are to believe Mr. G. M. Doolittle (and I know of no more truthful man), goldens have been bred up from the three-banded bees, and not by crossing with Eastern races—at least his have; and you will find, by writing to breeders of golden queens in the United States that at least half of such breeders have founded their stock on the rock of Doolittle. There are breeders of golden queens who are giving their best efforts to producing a strain of bees that will be world-beaters; and I'll tell you right now that they have about reached the desired goal. It takes a greater intelligence to rear goldens than some other strains. The more difficult it is to reach a desired result, the harder you must work and think and plan; but if you keep at it long enough you will succeed.

## THOUSANDS OF BEEKEEPERS PREFER GOLDENS

BY A BREEDER

I have been in the bee industry over 20 years, and have tried and tested all kinds of bees side by side. Taking everything into consideration, the goldens have proven the best and most gentle. They will gather more honey than any other strains with double the quantity of bees. I have only goldens now; but I will not try to run down any race. There are some very good bees of the dark races. The best and oldest beemen in this country praise the goldens, and

recommend them. The editor says that one who buys goldens or extra-yellow bees is likely to receive bad and good stock. I would ask if it would not be the same in case of the three-banded. I think it is getting time for those who have goldens to stand up for the superiority of these (the disease-resisting strain). I know there are thousands of beemen who would not have any bees except goldens, no matter what any one says.

## THE BRIGHTEST GOLDENS ARE THE GENTLEST

BY A BREEDER

Mr. Miller is very evidently biased on the subject, and in support of this I cite his assertion that goldens were the cause of laying workers. Why blame the poor bees

just because they were yellow? One would infer from his assertion that laying workers are found only in golden colonies.

It is not color that influences me in decid-



ing on goldens. I know that a great many prefer the so-called leather-colored or three-banded Italian; but it has been my observation that my brightest yellow bees are the ones easiest to manipulate, and they are better workers. I use no veil or smoker on my yellowest ones, but the ones showing a tendency to three bands or leather color I have to subdue before manipulating.

I do something in the way of demonstrating at fairs, and I always use my brightest yellow goldens to work with, frequently demonstrating on cool cloudy days, when, to open a hive of dark bees, would be to invite serious consequences. Among my favorite stunts is to shake a whole derby hatful of bees on top of my head (and there is not much protection left there any more).

Now as to Mr. Miller's query regarding behavior of the six hives of goldens that were previously gentle, a possible explanation is that, as long as they were *pure golden*, they were gentle (which he admits). On superseding the old queen her daughter would still show the racial characteristics, even if she should mate with a hybrid or black drone, and would still produce apparently golden bees.

Another reason is that the source of nectar, or, rather, the lack of a source of nectar, was the cause. He also states that the bees were in the hands of beginners. Ah! Any race of bees if handled in a careless timid manner is apt to resent it. If the bees were tinkered with six days of the week by a novice Mr. Miller could not expect to find them the acme of gentleness.

## A HUNDRED DOLLARS TO GET RID OF THE GOLDENS

BY D. E. LHOMMEDIET

Mr. Miller is right. A number of years ago I was desirous of getting some new blood into my stock. At this time the late Mr. Alley was advertising a dozen golden queens, every one a breeder, for \$10 per dozen. I received a dozen by mail. They were so bright, and they came thru so well, that I ordered three dozen more, and introduced them into four different apiaries.

The next spring about cured me of goldens. To make sure, however, I got some queens of another breeder, but they were very little if any better. They are not like honeybees. It cost me over \$100 to get them cleaned out of the yards. But the goldens have one good quality—they are handsome.

Colo, Iowa.

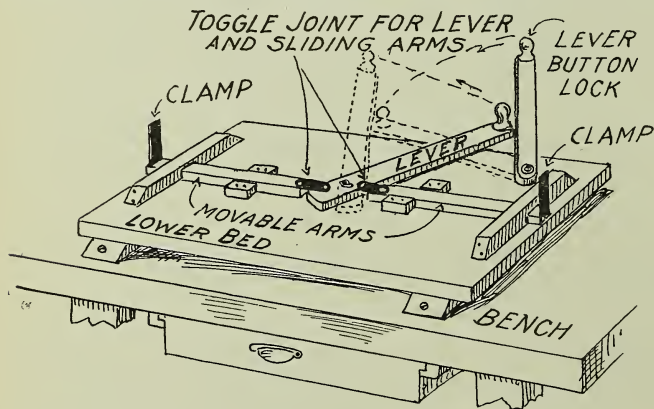
## A CALIFORNIA YANKEE'S METHOD OF WIRING FRAMES

BY S. A. NIVER

Perhaps my wiring-clamp will interest some beekeepers who have found the wiring of brood or extracting frames very puzzling. It is a slow tedious job at best. I have taken several ideas from the bee-jour-

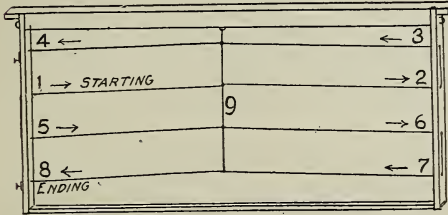
nals, and combined them into a simple device for holding the frame rigidly and squarely. It is easy to fasten the frame in position and release it, and the wires are strung tighter than by any other plan I know of.

It is a double-deck affair. Fig. 1 shows the lower deck with the lever arranged to pull the iron lugs against the end-bars, bending them in toward each other, while the wire is threaded. No. 2 shows the upper deck with a frame in position with the lever pushed to the left, and held in place by the "button." The clamp is fastened to the bench by means of a

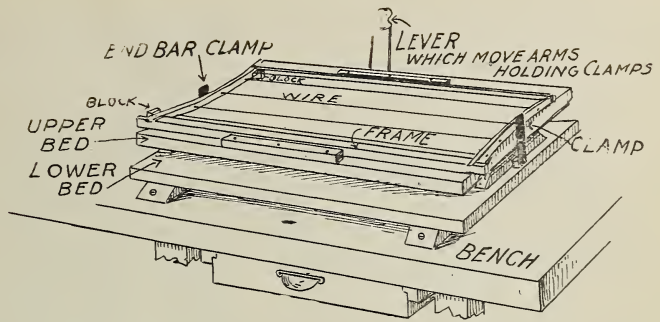


couple of screws so you can yank the wire as hard as you wish. After stringing the wire in the frame and releasing it from the clamp the end-bars spring back and draw the wires very tight.

In this locality, where the sun is hot and honey thick, I have found the cross-wiring scheme an excellent plan, worth all the trouble and more too. Fig. 3 makes it plain. I buy the wire



in the coil, and make a spool to fit it that revolves on a spindle attached to a frame fastened at the end of the bench. After



threading the end of the wire thru holes 1, 2, 3, 4, I tack it fast, then cut the wire at the spool and thread the other end thru Nos. 5, 6, 7, 8. One can avoid kinks in the wire that way.

A magnetic tack-hammer to pick the tacks up from the upper deck and start them in the proper places is handy.

We extract in the upper story of our honey-house, run the honey thru pipes immersed in hot water, into six-ton tanks below. It gets thin enough to strain thru fine cloth. This was illustrated in GLEANINGS some time ago.

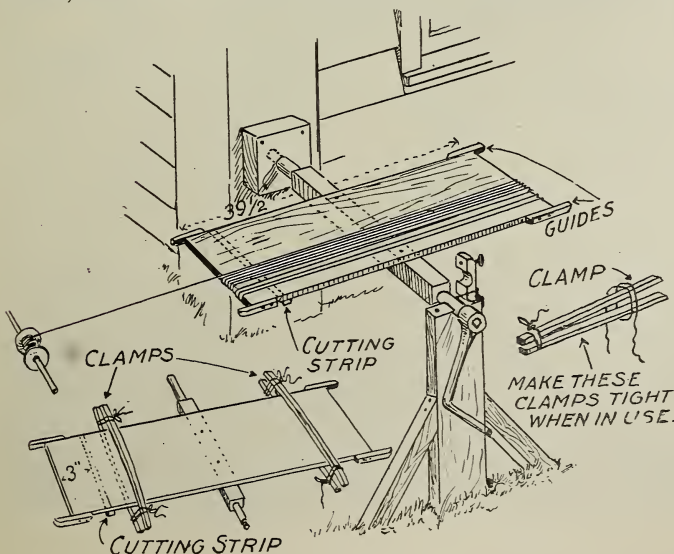
Greenfield, Cal.

## MY WIRE-REEL AND WIRING-BOARD

BY J. E. JORDAN

The illustration shows my wire-winding device. By using this device, all the wires will be of the right length to wire fully the frames, and all will be cut at one stroke.

To make this, bore a hole in a block and nail the block to the corner of your honey-house. This will serve as a bearing for one side of the reel. Put up the framework for

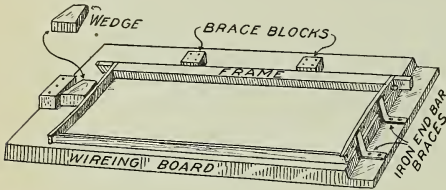


the other side of the reel as shown. Select a board  $\frac{1}{2} \times 7 \times 39\frac{1}{2}$  inches, and exactly in the center nail the axle, a square piece of wood, rounded at the ends as in the illustration. Nail a small strip,  $\frac{1}{2} \times \frac{1}{2} \times 7$ , across the board 3 inches from the end. This is to raise the wire for cutting.

Wind on all the wire that the spool holds, then with clamps hold the wire tight about 6 or 7 inches from each end of the board. Now with a pair of tinner's snips cut the wire at the half-inch strip,



and nail the board to a table within reach. By using the wiring-board shown in the second illustration I can easily wire 60



frames an hour, and all will be tight. After placing the frame on the board, force the

wedge between the brace and the end-bar of the frame, springing the latter in. After the frame is wired and this wedge taken out the end-bar will spring back in place and tighten the wires.

Morgan, Ky.

[We use practically this plan for cutting the wires the proper length; but instead of using clamps we merely tie coarse strings around the wires, board and all.

An important advantage of this plan which Mr. Jordan does not mention is that the wires drawn from the board are much less likely to kink than if pulled directly from a spool.—Ed.]

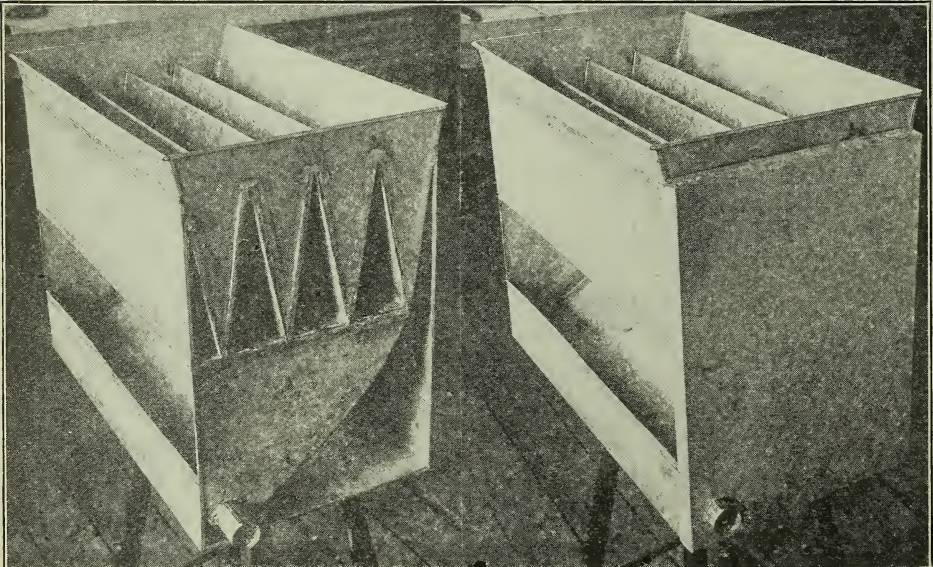
## AS GLIMPSED THROUGH THE CAMERA; THE BARTLETT-MILLER CAPPING-MELTER

BY H. H. ROOT

Since the publication of the article by H. Bartlett-Miller, page 164, Feb. 15, a number of beekeepers have written, asking for further particulars regarding the making of this capping-melter, because the sectional view shown was not entirely clear.

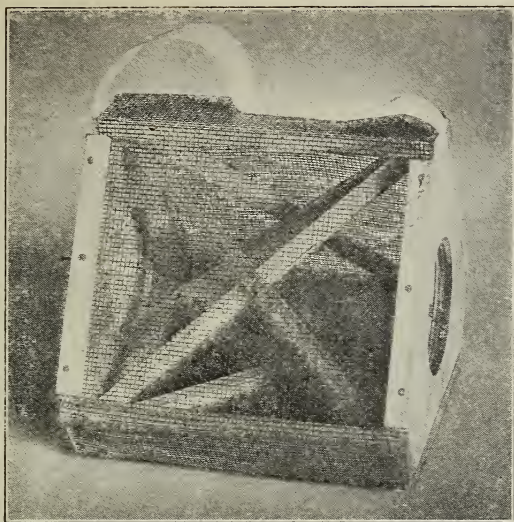
Believing that this particular form of melter has much to recommend it, we built one to test the coming season. The illustration shows two views of the melter. The first one was taken before the end was soldered on, in order to make plain the

construction of the inside part. The steam generated in the lower part rises and heats the curved false bottom, passes around the ends of this, and circulates thru the triangular tubes. The outer end, when soldered on as shown in the second illustration, confines the steam so that it circulates only thru the tubes. Both ends are exactly alike in this respect. There is no exit from the water or steam compartment except at the filler lip on the end opposite from the honey and wax outlet. In case the steam



Bartlett-Miller capping-melter described on page 164, Feb. 15. In the first view the end is not yet soldered on, so that the interior construction may show.





Half-pound cage for shipping bees. The triangular construction adds to the strength and insures abundant ventilation.

pressure becomes too great it can escape thru this opening.

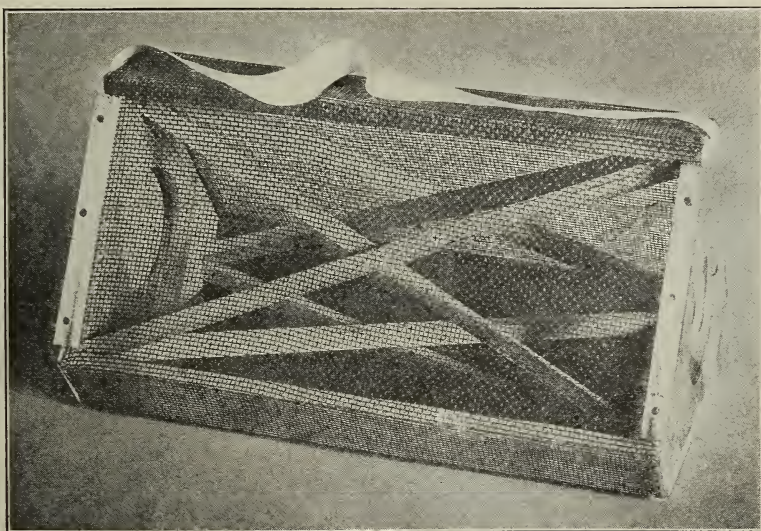
When the cappings fall into the melter they strike the nearly vertical sides of the steam-heated tubes, and begin to slide down immediately toward the narrow 5/16-inch spaces between the tubes at the bottom. By the time the honey drips down on to the false bottom beneath, the wax is melted, and the honey and wax both run out of the opening at the end of the gutter. The honey is not subject to the heat any longer

than is absolutely necessary, and there is no possible chance for it to dam up or be confined.

Mr. Miller, since the publication of his article, has been using a capping-melter on some rather strenuous work. On one occasion he reduced 267 pounds of cappings and a few combs of non-extractable honey in just thirty minutes.

In the melter which we constructed we reduced the height of the hopper over the tube to only 2 inches, as we knew that this would take care of the cappings under all ordinary circumstances. If two are uncapping, or if we wish to melt up a large amount of granulated honey, we shall build an extended hopper made of thin boards. This can be taken off out of the way when not needed.

At the present time there is one drawback to this design of capping-melter, and that is the question of material. Sheet copper is nearly three times its normal price; and that means that if copper were used the material alone would cost in the neighborhood of eight or nine dollars. It requires close to two days' time for labor in constructing. We finally decided on galvanized iron as the most practical material available. After considerable experimenting we succeeded in seaming the joints so that the solder would hold it securely. We do not think the plan of soldering the tube mentioned by Mr. Miller is practical when galvanized iron is used,



The one-pound cage.



for the alternate changes in temperature would be likely in time to cause a leak. With proper care, the galvanized metal ought to last a number of seasons.

#### A NEW STYLE OF COMBLESS PACKAGE FOR SHIPPING BEES.

Since our experiment with the Achord combless package as recorded on page 89, Nov. 1, we have been doing considerable further experimenting with a view of finding a more compact cage that could be more cheaply constructed than the one sent us by Mr. Achord and that would take a little less room as well. The cleats extending out beyond the sides of the cage are not especially liked by the express companies.

Our Mr. Arlie Pritchard has suggested the construction shown in the accompanying illustration. Notice that the ends of the cage are triangular, and that there is no vertical surface. It is impossible to crowd the cage so tightly to the wall as to shut off the ventilation, hence no projecting cleats are needed. This construction is light and strong, and it furnishes far more room for the bees than the old-style cages.

One extensive shipper to whom we sent one of the cages wrote that it looked like the best thing out; but he thought the cross-sticks should be arranged a little nearer the center to give more space between them and the wire cloth.

## A BEGINNER'S EXPERIENCE IN MANITOBA

BY MRS. FLORENCE WESTGATE

During the winter of 1914, owing to poor stores and too much heat and smoke in the cellar, out of sixteen colonies put in I took out only two which were of any use.

Seeing bees advertised in pound packages I ordered a pound from the South just for an experiment. They came the first of May, in the very best condition, with only about one dozen dead bees. I put them on two drawn combs filled partly with sugar syrup. They were beautiful bees. The weather was very cold, so I covered them with quilts and stuffed a feather pillow in the open space at the side of the hive and left them alone, except to visit them and sit and watch them hustle. They were the greatest little workers—out first in the morning and in last at night.

I determined to have more of them, and wired for five more packages which arrived

May 26 in even better condition than the others—not a spoonful of dead bees. How proud I was of them!

I followed the directions as nearly as possible, giving them drawn combs of sugar syrup. I tried putting a tomato-can of syrup inverted, on a saucer in the open space at the side of the hive, and it must have worked all right from the way those little duffers worked and built up.

I shook one of my old colonies June 17, and gave frames of brood to the new ones. They had their hives full of brood and bees in the middle of July. On the 19th the first one cast a fine swarm, and from then on I had a swarm every day until all but one of the new colonies had swarmed.

The bees I received May 1 filled two supers of sections and one half-depth super of extracted. I got 20 cts. per section and



A good retreat from the summer's heat—in Manitoba.

about 30 lbs. of extracted, which I sold at 15 cts. a pound. I did not give these bees any brood either, as they were almost a month ahead of the other five.

I now have 16 good strong colonies and two not so strong if they winter successfully. From the remaining colonies I sold 193 sections and 196 pounds of extracted.

I am enclosing a picture of part of my

new colonies. I am standing by the hive, with my daughter and two young friends who had been helping me extract. My little apiary is on the north side of the lawn, with about 20 acres of natural shelter to the west, and with a hedge on the east. The bush is oak and wild fruit-trees—plum, cherry, and saskatoon.

Portage la Prairie, Manitoba.

## WASHINGTON BEEKEEPERS' CONVENTION

BY H. T. SKINNER

The 22d annual convention of the Washington State Beekeepers' Association was held in the Commercial Club rooms at North Yakima, on February 9 and 10.

Weather conditions were unusually bad, and the attendance was not as large as expected; but those who braved the elements were well repaid, for the program was an excellent one.

The officers' reports showed the association to be in a healthy condition.

There were papers and addresses by some of the best-known beekeepers of the state on subjects of interest to beekeepers, one by Mr. Sauter, of College Place, Washington, on queen-rearing, being of particular interest. Mr. Sauter is the only large commercial queen-breeder in the state.

There was a paper by Professor Wilson, Entomologist of the University of Wisconsin, entitled "Better Queens, better Bees; better Bees, less Disease."

Professor Thornber, of the Washington State College, told of the college extension work.

On the evening of the 9th Professor Melander, Entomologist of the Washington State College, gave an illustrated lecture entitled "Ants, Bees, and Wasps," which was a revelation to many of those present.

Anson S. White, the only surviving one of the charter members of the association, read an interesting paper on the original membership and the early days.

The members were so well pleased in buying containers in carload lots in 1915 that they decided to order the same way this year, and may add some other articles to the list.

During the year four members have passed away, viz., L. R. Freeman, a charter member, and first secretary of the association; D. B. Greenwalt, at one time president; J. D. McIntosh, and Mrs. Pressey, all well and favorably known.

Ten new members were added during the year.

A committee was appointed to draft a foul-brood law, and also one to arrange for the purchase of containers for the coming year's product.

The officers elected for the ensuing year were: President, J. B. Ramage, North Yakima; vice presidents, C. W. Higgins, Wapato; E. Sauter, College Place; W. H. Tucker, Prosser; J. J. Peters, Arlington; secretary, H. T. Skinner, North Yakima; treasurer, Gus Sipp, Selah.

North Yakima, Wash.

[The program of the Washington State Beekeepers' Association for this convention is a pleasing departure from the conventional type. It is a really creditable 24-page booklet giving the program, interesting facts regarding the association, lists of members, etc. Enough advertising was secured to offset the cost of the printing and probably more.—Ed.]

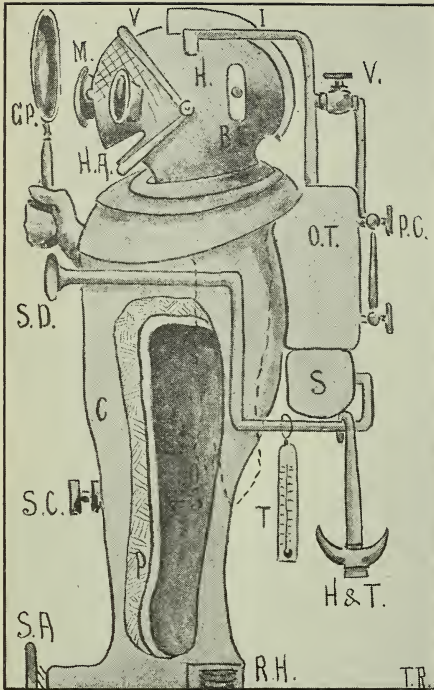
## A BEE-PROOF SUIT

BY "BEGINNER"

I have followed the discussion on the above subject in GLEANINGS, but all the suggestions developed weak points in practice. Here is one, however, that is *quite* bee-proof. It is the helmet of mild steel, built on the sealed-cover system, and fitted with a pair of magnifying rectilinear lenses. These enable the most timid student to make

accurate observations of the annoying bee oscillating flight in perfect security. The visor is of cold-drawn heavy-gauge steel wire. GP is a new-pattern glass periscope for viewing all cowardly rear attacks, and, incidentally, the important gauge glass on the oxygen-tank. S (beneath the OT) is the new type of cold-smoke battery. SD,





An improved bee-proof suit.

smoke discharge, shows the modern powerful sixteen-inch howitzer pattern. Hanging conveniently is the combined hive and

trenching tool. In case of onslaught by *overwhelming* numbers the apiarist may fearlessly dig himself in. Later the entrenchments should be lined with straw, and the bees wintered therein, thus turning apparent defeat into conclusive victory. On the front of the helmet is H.A., hot-air vent. This is very conveniently situated, as are also the aural apertures; but since the latter are covered with Porter bee-escapes the merest tyro will see that safety is the first consideration. (Unthinking critics have suggested this is to allow the "bee in the bonnet" to escape.) The smoke control is adjusted on that popular spot the knee, while shock-absorbers on the toes will minimize the difficulties should a hive be kicked by accident or diabolical intention. (Vide modern methods of handling hives instead of frames). R.H. is rubber heels to prevent hive-jar when walking about the apiary. The body of the suit is made of vulcanized sail canvas covering two inches of absorbent packing, preferably chaff; arctic moss is splendid, tho rather scarce. The whole is lined with the finest silk—not bee silk—for very few other clothes are worn with this dress. It will be noticed that the vital part of the head is reinforced with a metal jacket. In summer, water or ice may be inserted to keep everything comfortable. This point may be readily ascertained by the thermometer, T.

N. B.—Take care that the escape be fitted right side out.

## SOME CURIOUS ADVENTURES IN QUEEN INTRODUCTION

BY J. H. TODD

"The Dixie Bee" asks Mr. Todd or some other advocate of the Simmins method of introduction to explain "the advantage of the darkness," and she mentions how queens were introduced by the fasting method in broad daylight.

The advantage of the darkness in introducing a queen is that the bees are quiet, there are no robbers on the prowl, and the bees are not expecting or looking for intruders. They are, therefore, less likely to be suspicious of the queen than they would be, perhaps, if the operation were done in the day with possibly several robbers following the apiarist from hive to hive, and making a dart for the combs whenever a mat is raised.

Of course, I dare say that, during a honey-flow, the plan will work well in daylight; but we can take many liberties in such happy times that would cause no end of trouble in a time of dearth.

WERE CELLS STARTED IN SPITE OF THE PRESENCE OF A VIRGIN?

Since my article, p. 581, July 15, two rather strange things have occurred. On September 17 a hive with a very prolific queen was so crowded with brood and honey that the bees started loafing. The queen had been raised the previous autumn, and was in her prime. Brood was placed in a super above the excluder; below were drawn combs, one frame of brood and queen, the intention being to divide on the Alexander plan.

I was unable to attend to this hive at the proper time, and on October 2 I found virgins hatching in the super. I destroyed as many as I could find. The queen was mismated, and I did not want her young as mothers. One or two, however, were at large. I found and killed one.

On October 3 I found my poor laying queen outside the hive, just dying. Why?

Had one of these newly hatched virgins managed to get into the lower box the day previous when I was looking for them in the super?

Well, that same day I moved the super to a new stand. Now please remember these facts, because it is *just possible* that each box might contain a virgin.

On October 15 I gave each of these two hives a frame of brood to see whether they had a virgin. Both commenced queen-cells, and the evening following I gave each a young laying queen by the Simmins method. Next morning, and the morning after, I examined the ground outside these hives. There were no dead queens, and, as usual, I said to myself, "Accepted."

On the fourth day after introducing I examined these hives to see if the queens were laying, and found both of them being balled. One looked as tho she had been persistently ill treated ever since being introduced, and in neither case were any eggs laid. There was no honey coming in, and both hives had been queenless a long time. Well, I caged both queens on the push-in-comb plan, and twelve hours later I liberated them (yesterday). One appeared to be accepted, but the other was attacked at once. So I shook all the bees on to a board in front of the hive after making them fill up well with honey, and let the queen go among them again; but they went at her, even on the board. So she was caged again; and if they attack her again, as they have no brood, I shall confine them all in a swarm-box and see if that modifies their views at all. Is it possible they had a virgin, and started queen-cells on the brood I gave them in spite of this?

I know some one will say, "That fellow ought to feed those bees, and then perhaps the queens would be accepted, as there is no honey coming in." So may I give another strange experience along this line?

#### A STRANGE MIX-UP.

I have two hives of blacks only, standing side by side. They have old queens. The willows had yielded well, and they both prepared to swarm; but before the event came off the willow flow ceased, and dearth and windy weather came on. In one hive the cells were not far advanced, and I destroyed them, raising the brood Alexander plan. The other hive had sealed cells, and they had destroyed a few, evidently on account of the failure of the willow-flow. However, the day was hot, so I watched them, and at 11 A. M. out they came, leaving the old queen with her clipped wing. I moved the brood, substituting a hive of foundation to which they returned. Then I

knew that foolish swarm would starve. So two days later I went to give them some frames of honey, and was just in time to see the tail end of the procession entering the adjoining black hive and the old queen hopping around on the alighting-board.

"Well," I thought, "you have made real fools of yourselves. Now do you think that neighboring hive will admit a half-starved crowd such as you are?" To my surprise, however, they did without any hesitation. This event just coincided with the commencement of my young queens laying in twelve baby nuclei (*i. e.*, 24 compartments). Now, of these 24, six queens were lost in windy weather, mainly thru getting into the wrong side of the box. This left 18 which got mated; and just as they were due to lay, six of them swarmed out, even tho they had plenty of food. One lot repented and came back with their queen, and she settled down to lay the same day. Two more united, and came back with one queen and settled on a bush. I put them into an empty box and the queen went ahead laying at once.

I found another of these six queens dead outside one of the big hives, and still another dead outside the black hive which accepted the starving swarm mentioned above. I could see the yellow bees of the nucleus mixed with the black bees, and so many of them that I thought they must be at least two little swarms joined together. Curiosity caused me to pull the hive apart and see if, by a stroke of luck, one of my yellow queens had supplanted the old black tho I thought such far too good to be true.

Well, it is the unexpected that happens, and there she was, a fine yellow queen at the head of affairs. How is that for a mix-up of bees and queens with no honey-flow? Bees were all in a bad temper, but there was no fighting. Why should this black hive let in all sorts of swarms and queens without trouble, while this other hive and its increase are so set against accepting a laying queen?

#### THE NUCLEI THAT SWARMED.

These baby nuclei that I referred to swarmed out just as the queen should have commenced laying, but before she actually did commence, so I could not shut her in. I don't think the bees went with her on her mating-flight, as they went in the forenoon earlier than the queens generally fly. I saw most of the queens had been mated 48 hours previous. Those which I recovered were laying queens. They had plenty of food but little or no brood. The day was hot, but the nuclei shaded. No queenless nuclei or those with virgins swarmed—only those where the queen was due to commence



laying just as the swarm left. I have in mind Mr. Miller's article on the subject, p. 363, May 1, and I am trying with those which swarmed, leaving them in possession of the whole box as he says—three combs, one feeder, and the empty space remote

from the entrance. Of course this just halves the mating capacity of the twin boxes. Again, the editor says in the A B C that these boxes do not do so well with one compartment empty.

Renwick, N. Z.

## THE MIRACLE OF LIFE

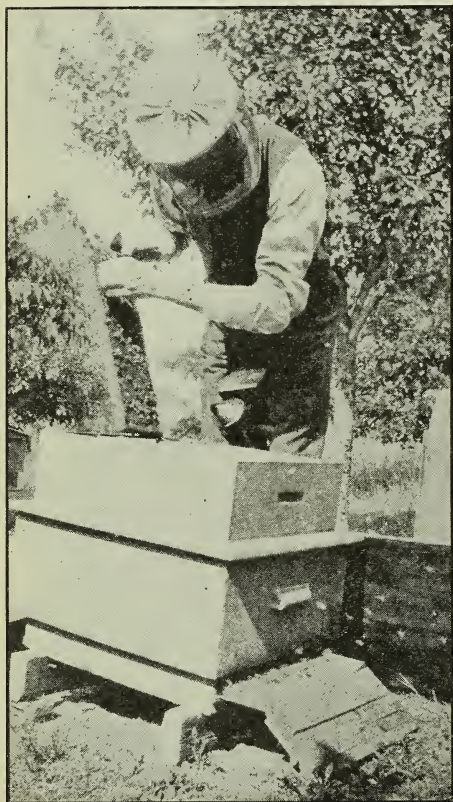
BY GRACE ALLEN

Within a beehive in the spring  
There lies a very wondrous thing—  
So frail an egg, it almost seems  
A mote to float thru fairy dreams  
In dews at night when silver light  
Comes dancing down in streams.

Yet life is in this tiny thing,  
And growth, and future eye and wing,  
Sure instinct, and the love of light,  
And treasured heritage of flight.  
(O wing of bees! And eye that sees  
With such a different sight!)

Wee egg, what miracle befell  
To couch you in this fragile cell?  
What miracle shall yet befall  
When wingéd life thru waxen wall  
Shall break its way some summer day  
To follow life's far call?

How vain my questions, egg in cell!  
You cannot understand nor tell.  
I cannot understand nor know  
How life can come and life can grow.  
All wonder seems to end in dreams.  
Perhaps we worship so.



These photos are interesting, mainly as showing the Alexander bee-hat in use; a method of opening a hive by which any rush of bees is directed away from the operator, a little smoke sufficing; the operator working barehanded, but having the smoker (held between the knees) handy for quick use; a hive-tool in the right hand; hive tilted slightly forward to shed water better; extended and sloped alighting-boards; simple hive-stand which has been previously described and illustrated in GLEANINGS. The hives are located among young fruit-trees, and bees are plainly shown on the wing before the hive.

B. KEEP, New Jersey.

# Heads of Grain From Different Fields



## The Backlot Buzzer

*Our neighbor who moved out from the city says there was a hive of pesky blacks on the farm when he bought it, and they were living in an old cracker-box back of the wagon-shed. He read in the papers that bees were good for fruit bloom, but he's afraid to move them. He wants to know whether it would be all right to move his apple-trees.*

## Illinois State Civil-service Commission Inspector of Apiaries May 6, 1916.

On May 6, 1916, the Illinois State Civil Service Commission will hold competitive examinations at Anna, Carbondale, Charleston, Chicago, DeKalb, East St. Louis, Elgin, Jacksonville, Kankakee, Lincoln, Macomb, Mt. Vernon, Normal, Olney, Peoria, Pontiac, Rockford, Springfield, Urbana, and Watertown for the position of Inspector of Apiaries.

This examination is open to men over 21 years of age who are residents of Illinois. The salary is \$4.00 a day and traveling expenses while working.

The duties of the position are defined by statute, and may be briefly described as involving the inspection of bee-farms throughout the state in order to prevent the spread of foul brood and other contagious diseases found among bees. It is the duty of the inspector, when such foul brood or other contagious diseases are found, to serve notice on the bee-farm and to have such infected apiaries, hives, and bees destroyed or do it himself, making a report of pecuniary damage done to the owner. The position, therefore, demands a thorow knowledge of diseases

peculiar to bees and considerable experience in breeding and caring for them.

Successful applicants will not be employed continuously, but will be notified as occasion demands it, to inspect certain bee-farms in their neighborhood. Accordingly, liability to notification will be restricted to the six or seven warmer months of the year.

The examination will consist of the following parts weighted as indicated:

Training and experience, 4; special subjects, covering treatment of foul brood, the habits and general care of bees, 6.

The candidates must make a grade of 65 or more on special subjects.

Applications will be received at Springfield until 5 p. m., Saturday, April 29, 1916. Address requests for application blanks to the State Civil Service Commission at Springfield, Illinois, or at Room 904, 130 N. Fifth Ave., Chicago.

Persons receiving a copy of this notice are requested to bring it to the attention of those qualified.

This circular contains all the information which the Commission has to give out concerning the above examination.

## A New Use for the Hot-water Bottle

The other day, the weather having turned mild, I was taking a walk thru the beeyard, and noticed before one of the hives an unusual number of dead bees—an almost sure indication that something was wrong—starving, I suspected. I hastily removed the packing and found the bees just quivering—quite past taking honey unless something was done for them. It suddenly occurred to me that the hot-water bottle would be the most convenient thing to apply. Returning to the house I filled the bottle, took it out, and placed it over the almost dead cluster, and drew the packing over it. The effect was magical. The gentle heat revived every bee that had any life in it, and they were soon filling themselves with honey from the card I had slipped in. The hot-water bottle warmed up the bees with no loss whatever; and a day or two later, when the sun was shining brightly, they were flying as freely here as at any of the other hives.

Denfield, Ont.

Ethel Robson.

## 100 Colonies from Nothing to Start with

I have 100 colonies, all in eight-frame hives, which I made myself. Five years ago my brother and I were pumping an oil-well; and so, having considerable extra time, we began catching wild bees. The result was a nice yard of 100 colonies, all hybrids, but workers.

I have never had a cell of foul brood so far, and I have never fed one pound of anything. The lateness of the tarweed bloom



accounts for that, as all colonies are heavy with stores now, Jan. 19.

I will extract before the main honey-flow starts, getting possibly 1200 or 1500 pounds of tarweed honey, which is almost a total loss, as there is no sale for it here.

I am a great admirer of the Dixie Bee, and wish it had more space.

On page 17, Jan. 1, appears an article by Frank C. Pellett, on the habits of skunks. If I had my bees in one yard and my chickens in another, and had to turn Mr. Skunk loose in one, I would put him in the beeyard. There are lots of skunks here, especially the small spotted variety, and I have seen them near my bees many times, and see their tracks in the wet sand; but I can't say that I ever lost any bees by them. But, on the other hand, in this country the skunk is a natural-born chicken-killer.

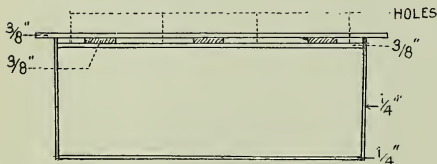
Rain! say, isn't it great? It's been raining for almost three weeks now, and the sage is beginning to leaf out.

Orcutt, Cal.

W. P. Worsham.

#### Frames with a Double Top-bar

Herewith is a sketch of the style of frame I have been using for the past ten years. It is far ahead of the solid top-bar, I think. Before I used them I used to put in sticks or a Hill device; but these were a poor substitute. I have frames that I used when I first adopted these, and they have never been filled up by the bees. They are very easily made.



I have found that laying a piece of burlap over frames and then a board right down on burlap tight will winter bees better than any cushions over bees. I have kept bees, or they have helped keep me, for about 30 years. I use large hives—nothing less than 15 to 24 L. frames, side by side. I had only one swarm from 40 last year. Large hives did it. I use two queens below, and let the bees all work together above. It's fun to see such colonies at work carrying in honey.

East Claridon, O.

E. C. Miller.

[The double top-bar as here illustrated was exploited some twenty years ago. They are all right, and we do not quite understand why they did not receive more recognition than they have. The claim was made at the time, that they would provide bee-passages so that the bees would go back and forth from one comb to the other during the winter. The claim was also made that they would eliminate to a great extent burr and brace combs, and that is true.

This is an instance of one of the good things that were introduced some years ago, but which dropped out of sight. About the time this double top-bar was suggested, the thick top-bar was also brought to the front. As this was a little better for eliminating brace-combs, it seems to have crowded the double top-bar into the background where it was forgotten.—Ed.]

#### Know the Men with Whom You are Dealing

On page 74, Jan. 15, L. E. Webb asks, "Are breeders of untested queens guilty of sending out a majority of their stock mated?"

The dishonest queen-breeders, if there are any, can positively answer this question, but they won't. The purchaser who has had the misfortune to get even 25 per cent of untested queens is not in position to say positively that he is being made the dumping-ground for hybrid queens; but his suspicion is aroused, to say the least. But what can be the opinion of one who receives eleven untested queens, and a mismatch in each case? It would seem that there is but one of two conclusions—namely, that the queen-breeder is dishonest or he is surrounded with black and hybrid bees.

In either case he should not be patronized. But why will one risk his money where there may be a doubt as to fair treatment when there are so many whose reputation is above question? I believe one should always buy his queens from the nearest reputable breeder, in order to insure quick and safe delivery. "Safety first."

I have been buying untested queens for many years, but from only two breeders—one in Ohio, the other in Kentucky, and have never had a mismatch yet. I had one drone-layer, which was made good at once. So it seems that the best advice to Mr. Webb's question would be, "Know the men with whom you are dealing."

Indianapolis, Ind.

J. F. Knight.

#### Some Bee-tree

We have had a very interesting time here the past week, as we stopped here and went bee-hunting. We found four trees on the railroad company's right of way, and proceeded to cut them; and I am frank to say that in 45 years of bee-raising I never saw the like. Two of the colonies had evidently been in the trees for some time, as they inhabited twenty feet of the main trunk of a tree, the hollow part being 18 inches in diameter. I never saw as many bees in one swarm in my life. There were bushels of them, nearly black, and the honey was the finest I have tasted in years. I have not weighed what we took out, but presume it will run about a thousand pounds, comb and all. To be sure, some of it is dark comb, but a large amount of it is new comb.

Kansas City, Mo.

A. J. Stanford.

A. I. Root

## OUR HOMES

Editor

What then shall I do with Jesus, that is called Christ?—MAT. 27:22.

Thou art the Christ, the Son of the living God.—MAT. 16:16.

And whosoever liveth and believeth on me shall never die. Believeth thou this?—JOHN 11:26.

While I write an evangelist by the name of Stough is stirring the city of Tampa by a series of sermons; and, as a result, hundreds are coming forward and accepting Christ as the "Son of the Living God."\* From the Tampa *Morning Tribune*, March 24, I clip as follows:

Comparing some of the politicians of Hillsborough County to Pontius Pilate, Evangelist Stough preached a strong sermon on the words of Pontius Pilate, "What then shall I do with Jesus?"

As he neared the close of his sermon Dr. Stough said that every man left the tabernacle after having either made a decision for or against Christ.

"The question of this text is not that of a Christian, but of a non-Christian, and is asked of a non-Christian crowd. Today no question is more vital, no question is asked more than the one of this text. Gladstone was visited at one time by an American just at the time of Armenian atrocities. The Premier was walking with the American when the latter asked as to what was the greatest need of the day for England, and Gladstone, without any hesitancy whatever, replied, 'You know there is but one question, it is that of Christianity, and, when my nation becomes convinced that that question is right she will answer every other question before her.'

"He was right; and remember that he who was the greatest statesman of his time was so keen of perception that all questions were gathered up in the one and exclusive question of Christianity.

QUESTION WOULD SETTLE WAR.

"If the question what we shall do with Jesus were settled tonight the war in Europe would be settled instanter. The main issue in Tampa, in Hillsborough County, is what we are going to do with Jesus. While here I shall arraign the men who are responsible for having this city wide open, and having held open, the sluice gates of vice and corruption. I shall not hesitate to strike wrong in high or low places or wherever it exists; but the chief question after all is, what are we going to do with Jesus?

"I want all to understand that I am not here as a reformer by any means or as a political propagandist. There is a question that is far greater than the one of who is going to be the next mayor of Tampa or who will represent this district at Tallahassee or at Washington. Reduce all the issues to the last analysis if you will, and the question is, what is Tampa, what is Hillsborough County, going to do with Jesus, who is called the Christ? What are you citizens, what are you heads of families, what are you individuals going to do tonight with Jesus, who is called the Christ?

"Don't let the little politicians dust your eyes. I am not here, as they claim, as an agent of the Anti-saloon League or any party, altho I am interested in anything that will work for the betterment of the nation. I am an evangelist of the cross of Jesus Christ.

LET OFFICIALS ANSWER.

"I want to ask the mayor of your city what he is going to do with Jesus, who is called Christ? I want to ask the sheriff, the chief of police, and every policeman and every candidate for office what he proposes to do with Jesus; and if he answers this one question correctly he will answer all the rest in the right manner.

"Jesus Christ is on trial these days. These are no common hours for Tampa. These are God's particular hours. The heart of God is concerned. This appeal for an answer to this question is made to the individual as well as to the community at large. No man can dodge or sidestep this most momentous question. Acceptance or rejection of God depends upon the answer to this question.

"Dr. Torrey, while preaching in the Moody church in Chicago, one Sunday morning, said that if the wickedest woman in Chicago were to come to Christ he would be ready and willing to accept her. Torrey little knew when he spoke these words that there was such a woman, or one of the lowest class, seated under the balcony in the church. She had not been within a church in years. She heard what the preacher said and said to herself, 'I wonder if he means me.' After the service she slipped up the aisle and found Christ while kneeling with the great preacher.

"There are people who pride themselves on the fact that they have been living decent and respectable lives. After the gospel of Christ has been preached 1900 years they still say that, since they live decent and respectable lives, it won't go so hard for them in the hereafter.

"That was spawned and spewed in hell; and if it were true that the living of a moral life would get a person into heaven, then Christ would have been an imposter and the church would be simply a teacher and a publisher of lies. No man ever gained heaven and eternal life without first answering this question and answering it right.

"Morality is not Christianity. Neither is Christianity morality alone. Morality is only one of the fruits of Christianity. God does not damn people because they are bad, nor does he save them because they are good. All of us have sinned and come short of the glory of God. If there is any damning done at all, man does it himself in not giving the right answer to this text.

ONLY WAY TO SECURE PEACE.

"Don't be deceived. You will never find peace until you come to the foot of Calvary's cross. It is a momentous question.

"I have the profoundest respect and pity for Pontius Pilate. He is one of the wonderful characters in the pages of this book. Did you ever study him? He is one of the keenest, clearest, and brainiest men of the crowd that stood against Jesus. He is a man who spoke little, but what he did say has come down to us thru the centuries.

"Oh what a chance Pilate had! If he only would have done so, his name might have come down thru the ages synonymous with those of Jesus. He could have championed his cause. Pilate had a wonderful chance and lost it. He knew of Jesus; and yet, if you never knew of Jesus before you came in this tabernacle tonight, I have said enough tonight to send you either to heaven or to hell.

"Pilate had a conscience that warned him three times, and you have a conscience. Then Pilate had a wife who warned him, and you have friends that have warned you and who have been praying for you.

"There are three things that kept Pilate from answering the question aright: He was a vacillator. He was a typical Hillsborough County politician.

\* We clip the following from the *Christian Herald*:

"Evangelist Henry W. Stough and party closed a six-weeks' campaign in Atlantic City early in February, and 4000 conversions are reported. The Stough party went from Atlantic City to Tampa, Fla.



Pilate wasn't so bad, but he had no backbone or convictions. Where the vertebrae should have been there was only gristle. Like the grain in the field, he swayed every direction. He was looking for the vote. He wanted prestige, the favor of the crowd. Do you know any like him about here? The town is full of them—side-steppers, men who lack conviction and courage, and are always apologetic, men who always train with the big crowd.

#### AFRAID OF PUBLIC OPINION.

"Pilate was afraid of his friends. He could not stand ridicule. How sorry I am for many people of Tampa, many of them church members, who are of this class. While this campaign is talked up and down the streets they are cravenly and cowardly, and can't stand the criticism, so they don't speak up. They apologize for the campaign, and side in. Next thing you know they lose an opportunity.

"Within the next ten days I hope to see the issues drawn closely, and you will be on one side or on the other. If you are a mere church member, Almighty God will put you on the side where you belong.

First, they knock me because I am the handiest thing to knock. Next they knock the tabernacle, and next the church, and then the question becomes deeper—it becomes one of righteousness or unrighteousness. Then it becomes one of enforcing or breaking of law, and before this campaign is much older it will be a line between Jesus Christ or the devil.

"Pilate tried to side-step, and he chased Jesus to Herod, but Herod drove him back. He could not get rid of the question, and neither can you.

"Pilate was afraid of his sins. He was crooked, and therefore a crook. He has lots of relations in Tampa. He had a record that he was ashamed of. There are men in this town who are opposing this campaign because they know that, if their record is shown up, state's prison is their desert.

"Tissot's famous painting shows Jesus and Pilate face to face, and underneath the painter has written, 'Christ before Pilate;' but he has painted better than he has written, for it really is *Pilate before Christ.*"

A few days ago a visitor called who said his father took GLEANINGS years ago, when he was a boy, and A. I. Root's Home papers were his especial delight, etc.; yet this man, the father of a family, had never united with any band of Christian people. If I am right about it, he seemed to think, as above, that "living a decent and respectable life" was enough. I said, "Surely, my good friend, your sympathies and feelings are with Christian people and what they are trying to do to save the world." He replied something like this:

"Oh, yes! of course," etc.

I should have said (but I did not get around to it) in the language of our text, "What are you doing with Jesus? Do you accept *him* as Peter did, as the Son of the living God?"

My good friend, whose eyes are resting on these pages, how is it with *you*? Do *you* accept Christ as you know him, as the Son of God? Your answer settles the whole question. Will you not write and tell me you *do*, that there may be *more* "joy in heaven," as we read about in God's holy word?

When the world accepts Christ or even a *majority* of the world, war will end in an instant as the evangelist has said. I hardly need add that the one who makes this acceptance must stand up before the world and live in accordance with it; and I am glad to note that the thousands who are coming forward in answer to Billy Sunday's earnest appeals, and other evangelists like him, *are* living out their profession nobly, with *very few exceptions*. Remember the voice from heaven that proclaimed to a sinful world, "This is my beloved Son in whom I am well pleased."

FOR OF SUCH IS THE KINGDOM OF GOD.—  
LUKE 18:16.

The following from the *Christian Herald* of March 15 is an excellent supplement to the Home paper of Feb. 1:

#### SHALL WE LET THESE BABIES DIE!

Judge Ben B. Lindsay recently addressed a meeting held at New York under the auspices of the Citizens Committee for Food Shipment, on the question of sending shipments of milk to save the lives of the starving babies of Germany. Judge Lindsay said:

"One of the most gripping scenes I ever witnessed, and one that I shall carry with me to my dying day, was the sight of a long line of mothers with tiny babies in their arms, waiting to be supplied with milk. I saw the splendid sanitary equipment and other arrangements for handling the milk-bottles and caring for the milk, but I saw no milk. The supply for the day had given out, and still there were hundreds of mothers left in the line who must pray for milk on the morrow, for milk to keep their babies alive. I saw the tear-stained faces of those mothers as they turned away, not knowing whether the little bit of life in their babies could be sustained until tomorrow.

"In many cities of 30,000 or 40,000 in Poland there is not a baby alive under three years, and in many places not a child under ten years, so terrible has been the demand for milk."

There seems to be plenty of other sorts of food in Germany; but the one thing that the babies cannot live without, the country is short of. Germany has never been a grazing country. Much of the food for its cows has been imported. Now these imports are cut off, and the babies are dying.

England and France say the United States must not allow the shipment of condensed milk to Germany to save the lives of these babies. What does the United States think about it?

One plan suggested by the committee is to arrange for shipments of milk to the Netherlands, to be reconsigned to Germany.

The *Christian Herald* would stop, if we could, the air raids on England, in which babies have been killed. We would stop, if we could, the submarine warfare in which children have perished. But the fact that these dozens of babies have been slain is no reason why America should acquiesce in the killing of millions of babies in Germany by taking away the milk they cannot live without.

You know the cry of the hungry child. You hear your own baby cry in the night. You know the sweet little sounds of content, as it finds the milk nature demands for it. Can you hear these other cries that do not cease, night or day? Can you see the little forms wasting, the cries growing fainter, the little eyes, their brightness long since gone, being drained at length of their tears, growing more

and more dim, and closing at last to open no more! Not dozens, nor scores, nor hundreds, but many thousands dying like this!

We send shells to kill men. May we not send milk to save babies?

#### AEROPLANE DEVELOPMENT.

The war has revolutionized the aeroplane. We no longer hear about the dangers of mere flying; mechanical ingenuity has apparently overcome them. In almost any kind of weather except the severest gales, the fliers now sweep along at over a hundred miles an hour, under 150 horsepower. Waldemar Kampffert, in a recent article, writes that there are over 5000 planes of various models in use in the different armies, and that the perils from armed aerial enemies and from aeroplane guns on the field below are such that the average flying life of a plane is not longer than two weeks! Very few of the machines used at the beginning of the war are now in service, and to repair the waste it may be necessary to build 50,000 aeroplanes a year while the war lasts. There have been no radical departures from the early models of Orville and Wilbur Wright, altho there are many varied arrangements of the wings. Types may vary, but the original principle persists. No longer is the aeroplane the toy of sport and adventure. It has become a surprisingly dependable machine.

#### THE "SUNSHINE CURE," GOD'S MEDICINE.

Mr. A. I. Root:—Do you remember the sick boy who came to Bradentown with his mother in the spring of 1914? Well, this is he, and I am not dead yet.

I read in your Home talks about the baby that is allowed to enjoy the sun every day (p. 1001, Dec. 15), and I am going to tell you about my experience with the sun cure.

The doctor advocated rich food, such as cream, raw eggs, buttermilk, etc., which, of course, I found agreeable enough. I sleep on the porch winter and summer, and never expect to quit. But the most remarkable part of the treatment, and the part that brought me up like a soap-bubble, was the sun cure. Fortunately I live on a farm with no near neighbors, so I had no hindrance from that quarter. The treatment consists of going as nearly naked as possible in the hot sun. From May 1 to Sept. 1, 1914, we had practically no rain in this section of the country. The sun beat down with a fury. Crops were ruined, and it looked like bankruptcy to most of the farmers, but it was just the thing for me. I made use of it too. That was one summer I did not "sit in the shade." I was in the broiling sun all summer with nothing on except a narrow pair of bathing-trunks. Of course I had to get myself accustomed to the sun before I could stand the continual glare all day. That is a tedious job, and must be gone about with caution. One would think that the heat of the sun would be very disagreeable; but I enjoyed it. It puts a snap and vigor into the body, and at night I slept like a baby, which was indeed a treat to me after the many nights I had suffered from insomnia and cold sweats. I am perfectly well now; but I wore my "sunning" clothes last summer, and intend to again this summer, just for the life it puts into me. LYMAN L. DULEY.

Smithland, Ky., Feb. 17.

In the above, nothing is said about exercise while out in the sun; but I take it our friend was all the time busy at work of some kind. Many times when I felt "too sick to do anything," by getting out in the sun, in scant attire, with my light hoe, I would soon be feeling fine.

The following from the *Plain Dealer* comes in nicely right here:

LIGHT THE BEST DISEASE CURE; EXPERT SAYS IT'S SUPERIOR TO WATER-BAG OR POULTICE.

Prof. E. C. Titus, in an address, stated that light is a much better cure for disease than hot-water bag or poultice. He says that when rays of light fall on the skin some are arrested by one layer of skin and some by another, while some are not stopped until they have penetrated the subcutaneous tissues.

When the light is thus arrested it produces radiant heat, which has a higher penetrating power than convection heat, such as generated by poultices, etc. Radiant heat penetrates two inches or more, while convection heat is excited principally on the surface.

#### MEDINA 45 YEARS AGO, OR 3 YEARS BEFORE GLEANINGS WAS STARTED.

My attention was recently called to a clipping from the *Medina Gazette* of July 8, 1870. This was about five years after I bought my twenty-dollar queen, and about three years before GLEANINGS was started. Below is the clipping:

The statement made by A. I. Root in his communication on the fourth page of the *Gazette*, of the amount of honey made by his bees within the past two months, seems incredible; but it is a solid fact. Five thousand pounds in sixty days by fifty hives! Has it ever been beaten in the United States?

After I got the Italian queen from Mr. Langstroth I began studying bees and bee culture almost day and night, in my desire to find out everything known about bees on the face of the earth. I commenced hunting up bee-books and subscribing for farm papers that contained articles on bee culture. The above report of 100 lbs. per colony for an apiary of 50 colonies was at that time considered a feat; but when the news became spread of what was possible with bee culture, reports came thick and fast from Florida, California, New York, Michigan, and all over our land. If I recall correctly, the largest number of pounds per colony from a fair-sized apiary was produced in the vicinity of New Smyrna, Fla. Perhaps some of the veterans can give me the figures. So far as I can recall, an apiary of somewhere toward 100 colonies made an average of between 200 and 300 lbs. per colony. This was just before the disastrous freeze of 1895.

#### "CHURNLESS BUTTER." HOW THEY MAKE IT IN CHINA.

It might interest A. I. Root to know how we make churnless butter here. Not being able to get more than four to six large bottles from a cow per day we have very little to spare for butter. After going through the process of getting the cream to the top we put it into a wide-mouthed bottle, say Mason jar; and after a few minutes of jerky shaking, which slops the cream against the side of the bottle, we have a nice solid piece of butter. A steady shake is not so good. It wants to hit the glass sharply. J. F. MOORE.

Shau Tai Kuran, China.



## WATER-WITCHING AND THE DIVINING-ROD.

From away off in New Zealand, at the close of a kind letter, we find the following:

I enclose an article on water-divining to convince A. I. R. that his sweeping statement recently made is not *always* correct. I know personally the Church of England parson referred to.

H. BARTLETT-MILLER.

Kihikihi, N. Z., Sept. 13.

Our friend incloses three pages of an article in the *New Zealand Farmer*. This article gives several illustrations and over two large pages of reading-matter. The man who has acquired a widespread reputation, as I take it, for his skill in finding water, is pictured; and as he is a reverend gentleman there is no question but that he is honest and sincere. If he studies his Bible, however, he will probably learn that "God is no respecter of persons," and he should also be aware that *science* is no respecter of persons. In the scientific world, what one man has discovered and learned in the way of controlling the forces of nature, other men can be taught, and I believe our most scientific and learned people recognize this. Yet he writes:

My theory is this: Flowing water generates a force which is at present unknown. This force, which is generated by internal friction, radiates upward, widening out, fanlike.

Electricity, wireless telegraphy, and all these wonderful things, work with everybody alike. I quote from the Rev. Mr. Mason as follows:

"I have tried hundreds of people and found that only three per cent have the power with the rod—but, as I have said, the rod is not reliable."

I quote again:

"I can quite understand people scoffing at such an idea as the divining-rod," said Mr. Mason, "and I can the more easily excuse it because the rod is not accurate in divination. With me, if I take the rod across a paddock it may move very vigorously; but in perhaps 25 per cent of the places where the rod responds so freely not a trace of water may be found upon sinking. With such a percentage of failures as that, people naturally say that the use of the rod is no good. In those cases I do not know what causes the rod to move; but the fact remains that it does. As I have said, I do not use the rod now, but simply move along with my arms in the position I have described."

"And do you think it possible for you to be mistaken now?" asked the writer.

Mr. Mason turned the question over in his mind. "No," he said, with quiet deliberation, "I really don't think so. Out of about 500 times in which I have located water, on only three occasions were the boring efforts unsuccessful. And even in those cases I feel perfectly convinced that if they had gone deep enough the water would have been got."

First he admits that only about three per cent of people generally can get any result at all with a divining-rod. Then, again, as you will notice in the above, he makes the

astounding admission that, even in his hands, the failures are about 25 per cent. I am very glad that he has made that acknowledgment; and I am glad, too, that he has thrown away the senseless stick or branch of a tree. He gets the impulse from his hands alone. I think he has helped the whole wide world, perhaps, to get along a *little* out of this old-fashioned superstition. In his concluding sentence quoted above he thinks the few failures would have been successes had they gone *deep* enough. But is it not probable that we might get water almost anywhere, sooner or later, if we only go "deep enough"? You see the explanation of this whole thing is like buying medicine at a drugstore. You take the medicine, and you get better. How can anybody tell if he would not get better just the same without it? Now for the divining-rod:

The water-witch tells you where to dig, and you find water. Would you not have found water, even if you had not employed him to locate it? Of course, one who has given the matter much study can judge pretty well by the growth of the trees, if there are any trees, or vegetation smaller than trees, such as weeds and grass. Our good friend owns up that it is not done through electricity or any other known force in nature. He gives it as his opinion that the water (perhaps a hundred feet or more below the surface) will manifest itself to the water-witch by some new force at present unknown and unrecognized by science. These old superstitions, like the moon's influence on animals and vegetation, predicting what the weather will be in certain localities months ahead, etc., die hard.

We clip the following from the *Scientific American*:

G. E. S. asks: I have heard of a method of finding a spring of water. Take a limb of a plum-tree which has a crotch in it. Take the two prongs of the crotch in the hands and hold the limb horizontally. Walk along, and when you walk over a spring of water the stick will be attracted to the ground. Please let me know through your valuable paper what condition of the wood (dry or green) gives best results. What size of limb should be used? Can any other kind of wood be used? To what depth can a spring be detected? Is this method successful when the ground is covered with snow? What causes the branch to dip? One person told me that, when he heard of it, the branch was attracted so that it broke. *Ans.*—We must say that we do not know anything about the finding of water by means of a crotched stick, nor do we believe it can be done. As a boy we lived in the country, where wells were depended upon for water, and we saw not a few men use the witch-hazel stick. It was said then that the stick must be of witch hazel. You say it should be plum. One is doubtless as good as the other. We have seen many failures with the sticks, and have known men to dig deep where the stick had turned down vigorously,

without any water being found. Sometimes water was found; but if there is a divining-rod of any value, water should always be found when it indicates water with any force. We cannot be of any help to you in explaining the divining-rod. The rods used were usually green, freshly cut.

#### SELLING HONEY; EDUCATING THE PEOPLE; SOMETHING ABOUT FETERITA.

In GLEANINGS for Aug. 15 I see an account of successful honey peddling. I am glad some one has been successful. As honey brings only 4½ cents a pound for the best grade, we thought we would try selling it from house to house. We fixed up an outfit and started out. We certainly learned some lessons. We found that 99 out of 100 families right here in the up-to-date little city of Riverside never taste honey. They hardly know what it is.

We stopped at one home, and my husband got out and took a quart jar of fine orange honey with him. He asked the ladies on the lawn if they would like some orange honey, and then went on to explain that we had also some buckwheat honey as well as orange comb honey and buckwheat comb honey. One woman looked up and said, "Have you any *bce* honey?"

My husband gravely informed her that it was all bee honey; and even then she didn't buy any.

The trouble with the honey business is that people are not educated on the subject. They think it strange that I let my little boy eat all he wants of it, and that it never makes him sick. He used to cry for candy every day until I let him have his fill of honey. He scarcely ever asks for candy now.

When the new shortening, "crisco," was put on the market, no one knew much about it. Now it is in nearly every house. How was it accomplished? Answer—advertising. The manufacturers knew they had a good article, but they didn't wait for it to sell itself in the face of keen competition. They didn't set it back in the corner of a grocery and wait to see what would happen. No; they started out to educate the people as to the peculiar merits of this particular article. They gave valuable recipes in the advertisements, telling how to use this fine new shortening. Now, in the short space of three years, the people have been educated on this subject. Why can't the same thing be done with honey?

Karo is advertised on every corner, for every purpose the manufacturers can possibly invent. Why can't the same be done with honey?

My father, W. E. Little, has been a close reader of GLEANINGS for 20 years. I read it, too. I am much interested in what Mr. Root writes about feterita. Milo maize grows well here; but the birds will harvest a five-acre piece with ease with no charge for labor. How do they like feterita?

Riverside, Cal., Aug. 29. MRS. MAUDE THOMAS.

My good friend, I guess you are pretty nearly right about educating the people; and our company are now spending thousands of dollars just to let people know what honey is *good for*.

In regard to feterita, I think you have struck one of the main troubles—it is so handy for the birds. The seed does not come in a husk like corn and wheat. It just stands right out in plain sight, ready to be appropriated. We have had that trouble in Florida already to some extent. If we do not cut it and give it to the chickens just as soon as it is fit to eat, the birds are after it.

#### ALLEGHENY CO., PA., FOR SUFFRAGE.

We clip as follows from the *Union Signal*:

Thirty-one of the sixty-seven counties of Pennsylvania voted "yes" for woman suffrage! Chief among these was Allegheny County (with the city of Pittsburgh and its population of over half a million)—a county exceeded in population only by California among the suffrage states, and now facetiously called "the state of Allegheny." Allegheny County enjoys the distinction of being the first county of a million or more population to give a majority for suffrage. Two of the big anthracite counties, Luzerne and Lackawanna, including the cities of Wilkes-Barre and Scranton, were carried for suffrage.

## HIGH-PRESSURE GARDENING

#### SWEET CLOVER; SEVEN BUSHELS OF SEED SECURED FROM THE ROADSIDE.

Sweet clover is taking a large place in the cropping of the little land I have to farm.

Last spring I sowed about twenty acres. Some of it has done well, and other parts not so well. This fall I am sowing eleven or twelve acres. About two acres were sown some ten days ago, and it is coming up nicely, as a rain came on while we were seeding the ground. On Monday of this week we finished sowing the clover, and then made a test of some four acres of the Grimm alfalfa. A good rain has just come, one day after seeding, and the prospect seems good for a fine start this fall.

Many people, our agricultural-college people included, claim that it will winter-kill. However, I am going to make the experiment, and know for myself. Do you know whether successful fall seeding is possible?

This fall I cut about an acre of roadside sweet clover, and secured seven bushels of seed from the same, which I count a very good yield.

Emporia, Kan., Sept. 15. CRAS. A. BOYLE.

In regard to sowing sweet clover in the fall, we sometimes have succeeded, and then we have failed. It depends a good deal on locality and on the amount of rain in order to have the young plants get root enough to avoid being thrown out by the frosts.

#### HANDLING SWEET-CLOVER SEED.

The following, from Chas. B. Wing, which we clip from the *Rural New-Yorker*, will, I am sure, be read with much interest by our readers.

There is no secret at all about the proper method for handling sweet clover for seed. I let mine get pretty ripe—ripe enough so that about three-fourths of the seed-pods have turned somewhat brown. Then I use a self-rake for harvesting, and I harvest only when wet with rain or dew. If it is a dry time this means getting up about two o'clock in the morn-



ing, harvesting until half an hour after sunrise, and then quitting. Handled in this way there need not be any loss from shattering, or at least not enough to amount to anything. If you have a very large acreage it would pay you to rig up some form of automobile lamp, and to cut all night.

I drop the bunches off just moderate sized, and do not touch them at all until just before time to thrash. I like to have at least one shower on them before thrashing, and count on the plants lying from three to six weeks before attempting to hull. The day before hulling, if the bunches seem tough underneath, we get out before daybreak and just tip them over, being careful while doing so not to jar, thereby preventing shattering.

This seed must be handled with extreme care from beginning to end, or else it will all be wasted. When ready to thrash I use tight-bottomed wagonbeds or sleds, and usually spread a canvas over these beds. We load on just what will ride comfortably, without having a man on the load at all, simply piling up what we can from the ground without any loading or tramping, and we hull with a clover-huller.

#### SWEET CLOVER AND MILK.

It is reported that the plant will sometimes taint cows' milk. It may be that it will; but I have fed this crop for several years, and am as particular about the milk as I very well could be, and have never as yet noticed any such result.

Ohio.

CHARLES B. WING.

#### OUR FLORIDA ALLIGATORS; A GLIMPSE OF THE "VARMINT."

The pictures below are from a "gator" that our good friend A. E. Ault and his boys captured near his place. On one occasion when the animal had sunk his teeth in a heavy stick Mr. Ault had in his hands, he commenced to roll over so rapidly the stick was either broken or twisted out of Mr. Ault's hands; and this reminds me that years ago Mr. Irving Keek told me of a couple of darkies who planned to capture a 'gator almost as big as a horse. They threw a rope over his head, and for safety(?) one of them tied the other end about his waist. As soon as the great reptile saw he was caught he commenced, like this one, to roll

over and over toward the lake. Had it not been for a sharp knife in the hands of his comrade the captor would soon have been drowned in the lake, and this is probably one of their regular "stunts" when in trouble.

#### "GATHER UP THE FRAGMENTS, THAT NOTHING BE LOST."

As there may be other localities like Florida, we give place to the below, clipped from the *Bradentown Evening Journal*:

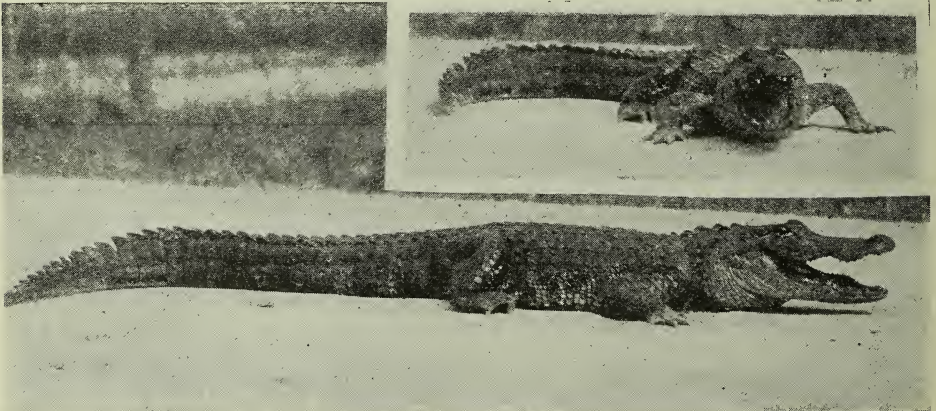
#### SAVE THE WASTE PAPERS.

For the past seven or eight years that we have been spending our winters in Bradentown, it has pained me to see waste papers, magazines, paper boxes, etc., burned up as if they were of no value, while in the North every scrap of paper and strawboard is bought up and worked over by the paper-mills. Altho I have been unable to find a market down here, I have been saving up our papers until Mrs. Root declares I shall have to build a barn to hold them, but finally relief is in sight. See the following item, just clipped from the *Cleveland Plain Dealer*:

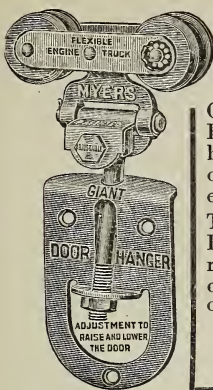
"Shortage of paper stock in the United States was discussed at a conference today (March 18) between Secretary Redfield and Charles A. Holder of the foreign trade adviser's office. France's embargo on the export of rags has caused many American manufacturers to fear that they may have to curtail production of their mills.

"The Department of Commerce recently appealed to housewives to save old papers and rags. Today the department began sending out 1,000,000 circulars to be posted in postoffices and elsewhere thruout the country, urging that papers and rags be saved. The commerce department promises to put those who save papers and rags in touch with manufacturers. Chambers of Commerce and trade associations have been asked to cooperate."

In Ohio the W. C. T. U. has for some time been gathering waste books and papers, and shipping them to the paper-mills, and some time ago I was told a similar movement was on foot in Florida. When I first came here I was also told there was no market for empty grain-sacks; but I kept on saving them up, and just recently I received several dollars for them from the Tampa Bay Company; but they said they then knew of no market for books and papers. "Waste not, want not." A. I. Root.



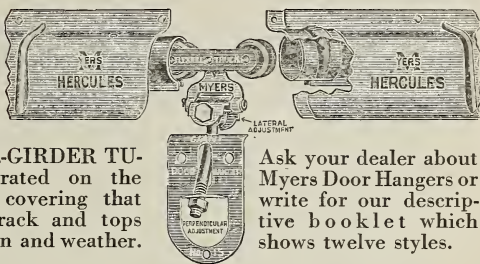
The animal stretched out on the smooth stone road in front of Mr. Ault's house.



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It is a satisfaction to have MYERS EASY-OPERATING DOOR-HANGERS on your barn, garage, and similar outbuildings, for they end all door troubles.

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delivering the ALADDIN on our easy trial plan. No previous experience necessary. Practically every farm home and small town home will buy after trying. One farmer, who had never sold anything in his life before writes: "I sold 51 lamps the first seven days." Another says: "I disposed of 37 lamps out of 31 calls." Thousands who are coming money endorse the Aladdin just as strongly. **NO MONEY REQUIRED.** We furnish capital to reliable men to get started. Ask for our distributor's plan, and learn how to make big money in unoccupied territory. Sample sent for **10 DAYS FREE TRIAL.** We want one user in each locality to whom we can refer customers. Be the first and get our special introductory offer under which you get your own lamp **FREE** for showing it to a few neighbors and sending in their orders. Write quick for **10 DAY ABSOLUTELY FREE TRIAL** Address nearest office.

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ITALIAN QUEENS				Nov. 10 to May 10				UNTESTED QUEENS BY THE 100:			
		1	6	12				April			\$75.00
Untested	\$1.00	\$ 5.50	\$10.00					May			70.00
Tested	1.25	6.50	12.00					June to November			65.00
Select Tested	2.00	10.00	18.00					Breeders, fair, each, \$5	Extra Select, each, \$10		
Pound Packages of Bees			1	6	12	25	50				100
1-lb. packages			\$1.50	\$ 8.50	\$16.00	\$33.00	\$ 65.00				\$127.50
2-lb. packages			2.50	15.00	29.50	58.50	116.00				230.00

Add price of queen to bees by the pound if queens are wanted. Safe arrival guaranteed on bees by the pound within six days of Mathis. Orders booked now, and queens shipped when wanted.

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## Dr. Miller's Strain of Italians

We have made arrangements with Dr. C. C. Miller to furnish us breeders, and therefore offer you the finest queens reared from the best stock on earth, as Dr. Miller holds the world's record for an apiary of more than 70 colonies having averaged 266 sections weighing 244 pounds. These are not queens bred from a mother that has produced one good yield, but it has been bred in them for generations until their honey-gathering is a fixed quality. In GLEANINGS, p. 788, Editor Root says, "Those queens (DR. MILLER'S) ought to be worth \$10 to \$25 each."

To inquirers:—I am rearing no queens for sale, but am keeping The Stover Apiaries supplied with breeders from my best stock; and from thence you can obtain the same queens you could get directly from me.

C. C. Miller, Marengo, Ill., March 1, 1916.  
Virgins, 50 cts.; untested, \$1.50; tested, June, \$2.50. Breeders, August \$5 to \$10. Bees, our strain, 1 lb., \$1.50; 2 lbs., \$2.50; nuclei, 1-frame, \$1.25; 2-frame, \$2.25; 3-frame, \$3.25; 8-frame, colony, \$6.00; 10-frame colony, \$7.00. Prices do not include queens. Queens, our strain, Untested, 75 cts.; Tested, \$1.25; Select Tested, \$1.75. Satisfaction guaranteed as well as safe arrival. 200 colonies in 10-frame hives at \$6 each. Orders filled in rotation; deliveries will be made as promptly as possible after about April 15. One thousand mating nuclei.

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## Archdekin's

### Fine Italian Queens---3-banded

Prolific, Hardy, Gentle. They are Persistent, Profitable, Producers. None better.

Prices	Before July 1			After July 1		
	1	6	12	1	6	12
Untested	1.00	\$5.00	\$9.00	.75	\$4.00	\$7.00
Tested	1.50	8.00	15.00	1.00	5.50	10.00
Select tested	2.00	10.00	18.00	1.50	8.00	15.00
2-frame nuclei	2.50	14.00	26.00	2.25	12.00	22.00
1-lb. pack. bees	1.50	13.00	25.00	1.25	7.00	13.00
2-lb. pack. bees	2.50	14.50	28.00			

Above prices of nuclei and packages do not include queen. Add price of queen wanted. Satisfaction and safe arrival guaranteed. Absolutely no disease in this country. Get your order in early, and secure prompt delivery. Orders booked if half of amount accompanies order. Queens ready April 15. Nuclei and packages May 1.

J. F. ARCHDEKIN, Bordlonville, Louisiana

## ITALIAN QUEENS, NORTHERN BRED

are surely most hardy for Canada and northern States. Try one. Untested, \$1.00; select tested, \$1.50. List free. Plans "How to Introduce Queens, and Increase," 25 cts.

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There is not a known case of bee disease in this or adjoining counties.

W. H. Laws, Beeville, Texas

Inspector for Bee County

## Three-band Italian Queens

They are bred from imported mothers. They are the best for honey-producing purpose; very gentle, and not inclined to swarm. If you buy once you will buy always.

**GUARANTEE** that all queens will reach you in good condition, to be purely mated, and to give perfect satisfaction.

All orders filled at once.

### PRICES --- April 1 to July 1

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Select Untested	.90 5.00 9.00
Tested	1.25 7.00 13.00
Select tested	2.00 11.00 20.00

L. L. Forehand, Fort Deposit, Ala.



## ITALIAN QUEENS THREE-BANDED

Ready April 1. Of an exceptionally vigorous and long-lived strain of bees. They are gentle, prolific, and the best of honey-gatherers. Untested, \$1.00; 3, \$2.75; 6, \$5.00; 12, \$9.00. Tested, \$1.25; 6, \$6.50; 12, \$12.50. Send for my free circular and price list, and see the natural conditions under which my queens are raised. Will book orders now.

John G. Miller, Corpus Christi, Texas  
723 South Carrizo Street

## Italian Queens --- Three-banded

We have bred queens over 25 years, and have hundreds of customers who will testify to the quality of our queens. We haven't any disease among our bees and never have had. Our prices are as follows: Untested queens, \$1.00 each; \$10.00 per dozen. Tested, \$1.25 each; \$12.00 per dozen. Select tested, \$2.00 each; \$20.00 per dozen. Breeding queens, \$5.00 each. Special prices on large orders. Our customers must be pleased. Safe arrival guaranteed. Send check with orders to

J. W. Taylor & Son, Beville, Bee Co., Texas  
Prices on nuclei on request.

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with a Record of 30 Years

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Three-banded Italians.  
Bred for honey and gentleness.

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Untested	\$.75	\$4.25	\$8.00
Select Untested	1.00	4.75	9.00
Tested	1.50	8.75	17.00

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Two-frame Italian nuclei with queen, \$2.50.  
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Three-band vigorous Italian queens, "Mendelian" bred. Untested, \$1.00; tested, \$1.50; breeders, \$5 and \$10. CHAS. W. QUINN, Fort Myers, Fla.

Tested leather-colored queens, \$2.00; after June 1, \$1.50; untested, \$1.00; \$10.00 per dozen, return mail. A. W. YATES, 3 Chapman St., Hartford, Ct.

Doolittle and Clark Breeding Queens ready for delivery May 1. Prices, \$10, \$5, \$2.50. Untested queens in June. Marietta, N. Y.

Vigorous, prolific Italian queens, \$1; 6, \$5, June 1. My circular gives best methods of introducing. A. V. SMALL, 2302 Agency Road, St. Joseph, Mo.

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Italian bees, full colonies, 3-frame nucleus, and pound packages. Let us quote you on what you need. Untested Italian queens, \$1.10; tested, \$1.50. I. J. STRINGHAM, 105 Park Place, New York.

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Order queens now for March and April delivery. Three-banded Italians, the business bee; untested queens, \$1.00 each, fully guaranteed; no disease. M. F. PERRY, Bradentown, Fla.

Ready now, best Italian bees, 1 lb., \$1.00; untested queen, 65 cts.; two-frame nucleus with queen, \$2.25. J. B. MARSHALL, Rosedale Apiaries, Big Bend, La.

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Golden Italian queens by June 1. Untested queens, 75 cts. each or \$8.00 per dozen; tested, \$1.25 each or \$12 per doz. Purely mated. Guaranteed. Send for circular. J. I. DANIELSON, Rt. 7, Fairfield, Ia.

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Golden California Goldens, 60 cts. each. We sell cheap, as we manufacture all of our own supplies. ALAMEDA APIARIES, 1042 Alameda Ave., San Jose, Cal. W. A. BARSTOW, Breeder.

Now booking orders for three-frame nuclei, Italian bees and tested queen; delivery June 1, \$4 each. Low freight, quick delivery, satisfaction. S. G. CROCKER, JR., Roland Park, Md.

FOR SALE.—Italian bees, 1 lb. with queen, \$2.25; one frame with queen, \$2.00. Queens, 75 cts. each. Safe delivery guaranteed; 30-page catalog with beginner's outfit for stamp. THE DERBY TAYLOR CO., Newark, N. Y. (formerly Lyons).

My bright Italian queens will be ready to ship April 1, at 60 cts. each; virgin queens, 30 cts. Send for price list of queens, bees by the pound, and nucleus. Safe arrival and satisfaction guaranteed. M. BATES, Rt. 4, Greenville, Ala.

Carniolan, golden, and three-banded Italian queens. Tested, \$1.00; untested, 75 cts.; 6, \$4.20; 12, \$7.80. ½-lb. bees, 75 cts.; 1 lb., \$1.25; nuclei, per frame, \$1.25. No disease; everything guaranteed. Write for price list. C. B. BANKSTON, Buffalo, Leon Co., Tex.

FOR SALE.—Three-banded Italian queens. Nuclei a specialty. Bees by the pound. My stock will please you as it has others. Let me book your order for spring delivery. Write for circular and price list. J. L. LEATH, Corinth, Miss.

To GLEANINGS readers, greetings for the new season. I thank you for past favors, and solicit your 1916 orders for Italian bees and queens. Your name on postal will bring prices promptly. J. B. HOLLOPETER, Pentz, Pa.

FOR SALE.—Bees in pkgs.; 2-lb. swarm, \$1.75; 3-lb. swarm, \$2.50. Untested Italian queens, 75 cts. each or \$8.00 per doz. Bees are free from disease, and we guarantee safe delivery. IRISH & GRESSMAN, Jesup, Ga.

Indianola Apiary offers bees and queens for sale for 1916 as follows: Tested queens, \$1.25; untested, 75 cts.; 1 lb. of bees, \$1.00; one-frame nucleus, \$1.25. Add price of queen if wanted. J. W. SHERMAN, Valdosta, Ga.

FOR SALE.—Northern-Ontario-Bee-Diseaseless District Bees. Hardest, healthiest. Prices will suit you. Write now to B. F. JOHNSON, 7901 Franklin Ave., Cleveland, O.; after April 1 to RAHN BEE AND HONEY CO., Haileybury, Ont.

GRAY CAUCASIANS.—Early breeders, great honey-gatherers; cap beautifully white; great comb-builders; very prolific; gentle; hardy; good winterers. Untested, \$1; select untested, \$1.25; tested, \$1.50; select tested, \$2.00. H. W. FULMER, Andalusia, Pa.

We want to tell you about our bees, quote our prices on queens and bees by the pound, and let you know the express rate from Brady to your station. Let us hear from you. R. V. & M. C. STEARNS, Brady, Tex.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey-gatherers, beautiful and gentle. Mated, \$1.00; six, \$5.00; tested, \$3.00; breeders, \$5.00 and \$10.00. C. W. PHELPS & SON, Wilcox St., Binghamton, N. Y.

Three-banded Italians, ready after June 15. Will book your orders now with 10 per cent cash down. Queens, untested, 75 cts. each; \$8 per doz. Nuclei, 1-fr., \$1.50; 2-fr., \$2.25; 3-fr., \$3.00. Full colonies, \$7.00 each. EGGERS APIARIES CO., Rt. 1, Eau Claire, Wis.

FOR SALE.—Three-banded Italian queens and bees. I am booking orders for June delivery, untested queen, 75 cts.; 6, \$4.25; 12, \$8.00; tested queens, \$1.25; 6, \$7.00; 12, \$12.00. Write for circular and price list. ROBERT B. SPICER, Rt. 181, Wharton, N. J.

Queens ready in May. Northern-bred three-banded Italians, bred for gentleness, wintering, and honey-gathering. Select untested, \$1 each; 6, \$5.00; select tested, \$1.75 each. Send for price list and free booklet, How to Transfer, Get Honey, and Increase. J. M. GINGERICH, Kalona, Ia.

FOR SALE.—Early delivery of three-band Italian queens, pure mating, I guarantee. Any number for only 75 cts. each. These are bred from the best stock and by the best methods. No disease. We are better prepared than ever before to fill orders promptly. W. D. ACHORD, Fitzpatrick, Ala.



FOR SALE.—Good Italian queens, untested, 75 cts.; tested, \$1.00; nuclei, 2 frames, \$3.00; 1-lb. package, \$2.00; 2-lb. package, \$3.00, with untested queen. Will be ready to send out about April 1.

G. W. MOON, 1904 Park Ave., Little Rock, Ark.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey-gatherers as can be found; each, \$1.00; 6, \$5.00; tested, \$2.00; breeders, \$5.00 to \$10.00.

J. B. BROCKWELL, Barnetts, Va.

A daughter of one of Dr. Müller's best honey queens, and the *Beekeepers' Review* for 1916 for only \$2.00. A daughter of one of the very best honey-getting queens selected from 1100 colonies worked for extracted honey, from the yards of E. D. Townsend & Sons, and the *Review* for 1916 for only \$1.75. The queens will be mailed in June direct from our breeders in the South. A rare buy.

THE BEEKEEPERS' REVIEW, Northstar, Mich.

If you want a queen for that queenless colony, we can send it to you by return mail. Young tested queens, \$1.00, \$12.00 per dozen. Untested, \$1.00; \$9.00 per dozen. We breed the three-banded Italians only, and we breed for the best. Our thirty years of queen-rearing proves this. We never had a case of foul brood in our apiaries, and we guarantee every queen sent out by us.

J. W. K. SHAW & Co., Loreauville, La.

Carniolan, Golden, and three-banded Italian queens. Tested, \$1.00 each; 6, \$5.40; untested, 75 cts. each; 6, \$4.20. Bees, 1 lb., \$1.25; 2 lbs., \$2.25. Nuclei, per frame, \$1.25; two-frame, \$2.25; eight-frame hive, \$6.50; ten-frame hive, \$7.00. Write for price on large orders. Everything guaranteed to reach you in good order. No disease here. Cash must accompany your order. Please mention GLEANINGS. I. N. BANKSTON, box 135, Buffalo, Tex.

Three-banded queens and bees by the pound, ready now. One untested queen, 90 cts.; \$9.00 per doz.; \$17.50 for 2 doz.; \$65.00 for 100. Tested, \$1.50 each; fine breeders, \$5.00 each; 1-lb. swarm with fine queen, \$2.25 each; without queen, \$1.50 each; 50 for \$70.00; 100 for \$135. Add queens at above prices. I can furnish you in any quantity from one to 1000 queens or swarms of bees at above prices from April 15, thruout the season. Write to Curd Walker, the Queen-breeder, your wants. He will give you a square deal. Box 18, Rt. 1, Jellico, Tenn.

FOR SALE.—Swarms of Italian bees in packages, 1 lb. of bees, \$1.50; 2 lbs. of bees, \$2.50; for 50 or more they are 12½ cts. less. Untested Italian queens, 75 cts. each; tested Italian queens, \$1.25 each. No reduction on quantity of queens for April and May. Quality, service, safe delivery, and no disease, I guarantee. We spare no labor nor money to produce the best for you is why we cannot make a lower price. Early swarms get the honey. We can deliver the goods with pleasure to both of us.

W. D. ACHORD, Fitzpatrick, Ala.

The successful package-shipper and queen-breeder.

BEEES AND QUEENS.—Doolittle's Italian stock speaks for itself. They are gentle, resist disease, and are fine honey-gatherers. We breed this stock only, and guarantee delivery only to points west of the Rocky Mountains. Untested queens, 75 cts. each; \$8.00 per dozen; \$60 per 100; tested queens, \$1.25 each; \$12 per dozen; \$85 per 100. Three-frame nuclei, \$2.25 each; \$200 per 100. Bees, ½-lb. packages, 75 cts. each; \$6.00 per 100; 1-lb. packages, \$1.00 each; \$85 per 100. Add price of queens to above packages. Complete catalog free on application. SPENCER APIARIES, Nordhoff, Cal.

FOR SALE.—Three-banded Italian bees. Three-frame nuclei, with queen, \$3.00; without queen, \$2.25. We have more bees than we can manage, and can, therefore, supply you with the biggest and strongest nuclei you will be able to find anywhere. Send your order now, and money when you want them shipped. Can begin shipping April 15, or earlier, if necessary. Bees are all on standard Hoffman frames, and combs are all built on full sheets of foundation and wired frames. We guarantee bees to be free from disease.

THE HYDE BEE Co., Floresville, Tex.

QUEENS.—Italians exclusively; golden or leather-colored. One select, untested, \$1.00; 6, \$4.25; 12, \$8.00. Tested, \$1.25. Best breeder, \$5.00. Early swarms of young bees in light screen cage a specialty. One 1-lb. package, \$1.25; one 2-lb., \$2.25; queen extra. For ten or more, write for price. Also nuclei and full colonies. I am booking orders now, with ten per cent deposit for delivery March 15 and after. Safe arrival, prompt service, and satisfaction guaranteed. Circular free.

J. E. WING, 155 Schiele Ave., San Jose, Cal.

## HELP WANTED

WANTED.—Expert beeman to help in business of 1100 colonies. Work starts April 15. Good wages. EARL HANKS, Hageman, Ida.

WANTED.—One student and one experienced helper in the largest and probably the best-equipped apiary in Canada. G. A. DEADMAN, Brussels, Ont., Can.

WANTED.—Man with some experience in handling bees to assist in large apiaries. Please give full particulars in first letter.

JOHN B. AHLERS, Rt. 1, West Bend, Wis.

WANTED.—Industrious young man, fast worker, and of clean mental and body habits, as a student helper in our large bee business for 1916 season. Will give results of long experience, and board and small wages. Give age, weight, experience, and wages in first letter.

W. A. LATSHAW Co., Clarion, Mich.

## SITUATIONS WANTED

WANTED.—Position in apiary, preferably in northern California or Oregon; have had some experience. Prefer work in queen-rearing.

E. C. TOWNE, Elroy, Wis.

## BEEKEEPERS' DIRECTORY

Well-bred bees and queens. Hives and supplies. J. H. M. COOK, 70 Cortlandt St., New York.

QUIRIN'S superior northern-bred Italian bees and queens are hardy, and will please you. More than twenty years a breeder. Orders booked now. Free circular. H. G. QUIRIN, Bellevue, Ohio.

QUEENS.—Improved three-banded Italians bred for business, June 1 to Nov. 15, untested queens, 75 cts. each; dozen, \$8.00; select, \$1.00 each; dozen, \$10.00; tested queens, \$1.25 each; dozen, \$12.00. Safe arrival and satisfaction guaranteed.

H. C. CLEMONS, Boyd, Ky.

## TRADE NOTES

In rearranging our stock we find a number of items no longer listed in our catalog, which some of our readers may be glad to get at the bargain prices at which we offer them to reduce stock or close out entirely. We list a number of these specials on this page, and may add others later as these are disposed of.

### HIVE-HANDLES.

We have a surplus stock of handhole cleats such as we formerly included with all dovetailed hives, and which have been listed at 75 cts. for 100, and will dispose of them to those who want them at 25 cts. per 100; \$2.00 per 1000.

OLD-STYLE DOVETAILED CHAFF HIVES WITH BOTTOM TO NAIL FAST.

Of these old-style chaff hives we have a number of both 8 and 10 frame packed single and 5 in a package, which we offer, to close out, as follows: YW 5/8, one story, with frames, eight frame; 8 packages, one hive each, at \$1.75, and 12 packages,

# HIGHEST CASH PRICES

. . . Paid for . . .

## Fine Yellow Beeswax and White Extracted Honey

### Trade Your Honey and Wax for Bee Supplies

Send us samples, and state price wanted

The A. I. Root Company, Medina, Ohio

five hives each, at \$8.00. The same in 10-frame size, 2 packages, one hive each, at \$1.85, and 3 packages, five hives each, at \$8.50.

#### NO. 2 OR B GRADE HOFFMAN FRAMES.

In culling over the material cut into Hoffman frames, we find pieces with slight defects which we do not want to put into perfect stock, but which are usable, and too good to throw into the furnace for fuel. We have accumulated some stock of such frames, which are packed 100 in a box, and offer them at \$2.25 per 100; \$10.00 per 500. These are a bargain at the price, to one who is not too particular as to what he uses.

#### METAL SPACERS SLIGHTLY DEFECTIVE.

In making the metal spacers for the metal-spaced frames there are a percentage which come out either sheared a little scant on one side, or with slight breaks in the tin where it is drawn up into the spacing-boss. These are hardly passable as perfect stock, but in actual use they will answer every purpose as a spacer. Rather than throw these into the scrap we will offer them while they last, including nails to nail them on, at 20 cts. per 100; \$18.00 per 1000. Transportation charges extra.

#### 1½ H. P. SIXTY-SPEED ENGINE.

We have in stock two of the engines we formerly listed as sixty speed before adopting the Busy Bee engine. These are mounted on wheels, and have a counter shaft by means of which 60 different speeds can be obtained by the various changes of pulley sizes on the counter. This engine sold for \$60.00. We offer these to close out at \$45.00 each.

#### WHEELBARROW WHEELS.

We have a number of extra steel wheels for wheelbarrows, which we offer at a special price of \$1.25 each, or, including a pair of springs with bearings, for \$2.00. These wheels are 20 inches in diameter, with 1½-inch tire, and solid cast hub holding spokes and axle in place. These wheels regularly sell at \$1.75, and springs at 50 cts. each.

#### SUPERS FOR EXTRACTED OR CHUNK HONEY.

We are offering, while they last, the following bargains in nailed supers for extracted honey. Some have been slightly used, and are in good condition. Prices f. o. b. Medina.

200 D9/10, nailed and painted, with top and bottom starters, nine frames in each, new. Sell new for \$1.20; offered at \$6.00 for 10; \$55.00 per 100.

410 D8/10, nailed, and some painted two coats, some one coat; 273 not painted. Sell new for 90 cts.; offered at \$5.00 for 10; \$45.00 per 100.

180 D8/10 nailed supers, no paint. Sell new for 85 cts.; offered at \$4.50 per 10; \$40.00 per 100.

The first two lots are the 5½-inch supers with hanger clips and shallow Danz. frames. The last lot are the same depth supers with shallow Hoffman frames hanging in rabbeted ends. Either style may be used for extracting or divisible brood-chambers. The price at which we offer them all nailed up is much below the regular price of same shipped in flat.

#### TOBACCO DUST FOR KILLING INSECTS.

Fine tobacco dust is used for dusting on lettuce and other plants for killing the insects, as well as for fertilizer. We have two kinds of dust—the very fine, from ground stems, which we offer at 20 cts. for 10 lbs.; \$1.50 per 100 lbs., or a case of about 400 lbs. at \$1.00 per 100 lbs. We can supply, also, a much coarser dust from leaves, which is much stronger, at 50 cts. per 10 lbs., \$3.50 per 100 lbs.

#### ALSIKE CLOVER SEED.

We still have a number of bushels of alsike clover seed, which we offer, subject to previous sale, at \$10.00 per bushel, with 25 cts. extra for bag to ship in. Any quantity from a peck up at this rate. Lot of two bushels or over, no extra for bags. It will not last long at this price. If you want some, better order promptly.

#### SWEET-CLOVER SEED.

We have a good supply of very choice hulled white-sweet-clover seed scarified for quick germination, requiring only 10 lbs. per acre for a good stand. We offer this for a short time to reduce stock at \$18.00 per 100 lbs. Now is the right time for sowing with a nurse crop to produce hay or bloom with seed next year. We have also choice hulled yellow which we will sell at \$15.00 per 100 lbs. A thousand pounds of hulled white for shipment direct from Little Sioux, Iowa, not scarified, offered at \$15.00 per 100 for prompt acceptance.

#### BEEHIVE PAINT ADVANCED.

The prices of all ingredients used in making paint has gone so high that we can no longer maintain prices on paint which have been in force. We quote till further notice, \$2.75 per gallon; \$1.40 per half-gallon; 75 cts. per quart; 40 cts. per pint, with a corresponding advance in the wholesale and jobbing price.

#### SPECIAL SASH FOR COLD-FRAMES.

We have several dozen sash made for Root brooders with four lights, 10 x 14, and measuring outside 24x34. We offer them open at 30 cts. each; 6 for \$1.50; with glass at 55 cts. each; 4 for \$2.00. These might be used on small cold-frames for starting plants and are much cheaper for size than the regular hot-bed sash.

#### IMPROVED CAPPING-MELTER.

The capping-melter illustrated elsewhere in this issue is covered by Beuhne's patent issued several years ago, under which we secured license to manufacture. We will furnish these machines made of galvanized iron at an introductory price of \$15.00; or, made of sheet copper, at \$25.00. If these give the satisfactory service we have every reason to believe they will we expect to catalog them in the next edition as "Beuhne's Improved Capping-melter." It would make too long a name to include in it the names of those instrumental in so improving the original Beuhne as to make it so much more satisfactory in operation.

THE A. I. ROOT COMPANY, Medina, Ohio.



# Quality Quickly

There's the reason why we maintain two western branches and warehouses. The convenience of lower freight and prompter shipments, coupled with the excellence of our bee supplies, have been realized by western honey-producers.

It is unnecessary to talk here about the type of supplies carried in stock at these two distributing points.

## The Proof of Quality

Our exhibit at the Panama-California Exposition was awarded a grand prize and a gold medal.

This is California's  
Decision

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## The A. I. Root Co., Los Angeles, Cal.

Geo. L. Emerson, Manager, 948 East Second St.

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Where the Weed foundation-machines are making perfect non-sag foundation. Send us your wax to be made into foundation. We buy wax too.

Root Redwood Hives.—A sample hive body with cover and bottom KD, \$1.00. Quantity prices on application. We cut hive parts to order.

New machinery for manufacturing hives and frames has been added. Extractors are now shipped "knocked-down" from the factory at Medina.

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## The A. I. Root Co., San Francisco, Cal.

245 Mission Street

We have moved. Office and warehouse in the same building.  
Write for catalog and send us your list of wants.

# Beauty **PATTERN**

## Twenty-five Cents for New Subscription to Gleanings Six Months and Premium Pattern

Select any Pattern as premium, sending 25 cents in stamps for a new six-months' subscription to **GLEANINGS IN BEE CULTURE**. Be sure to give the pattern number and size desired, and the complete address of the new subscriber whose order you send.

Canadian postage, 15c extra;  
Foreign postage, 30c extra.  
Selling price of Patterns, 10 cents each.

## The A. I. Root Company Medina, Ohio



1676.—Girls' Dress. Cut in 4 sizes: 6, 8, 10, and 12 years. It requires 3 yards of 44-inch material for a 6-year size. Price 10 cents.

1668.—Girls' Dress. Cut in 4 sizes: 4, 6, 8, and 10 years. It requires 3½ yards of 44-inch material for an 8-year size. Price 10 cents.

1667.—Ladies' House Dress. Cut in 6 sizes: 34, 36, 38, 40, 42, and 44 inches bust measure. It requires 6½ yards of 44-inch material for a 36-inch size. The skirt measures about 3 2-3 yards at the lower edge. Price 10 cents.

1670.—Costume for misses and small women. Cut in 3 sizes: 16, 18, and 20 years. It requires 5½ yards of 36-inch material for an 18-year size. The skirt measures about 3 yards at the lower edge. Price 10 cents.

1371.—Girl's dress. Cut in 4 sizes: 2, 4, 6, and 8 years. It requires 2¾ yards of 36-inch material for a 6-year size. Price 10 cts.

1662-1682.—Ladies' Costume. Waist 1662, cut in 6 sizes: 34, 36, 38, 40, 42, and 44 inches bust measure. It requires 3 yards of 36-inch material for a 36-inch size. Skirt 1682, cut in 6 sizes: 22, 24, 26, 28, 30, and 32 inches waist measure. It requires 4¾ yards of 44-inch material for a 24-inch size, which measures 3 1/3 yards at the foot. This calls for two separate patterns, 10 cts. for each pattern.

1535.—Ladies' Over-all Apron. Cut in 3 sizes: Small, medium, and large. It requires 6¼ yards of 36-inch material for a medium size. Price 10 cents.





# HONEY - CANS

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We have made especial efforts this season to supply our patrons with cans and cases of the finest quality, and we have now in our warehouse a complete stock ready for immediate shipment to you.

There is much satisfaction in knowing that there is a dependable source of supply so near to all Texas Beekeepers, and others in the great Southwest. Experience has taught us to anticipate properly the needs of our patrons, and we have as yet failed to fall down at a critical time. Sometimes we feel that it is not wise for Beekeepers to trust entirely to the supply house for eleventh-hour assistance, but we concentrate our energies, nevertheless, on complete preparation, and when you are ready we are. Write us for prices.

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## Weed's New Process Comb Foundation

We have made extensive improvements in our comb-foundation factory this season at a great expense, and are now operating day and night under the supervision of a man direct from the A. I. Root Company, who has had many years of experience in the manufacture of this product. When placing your order with us you are assured of receiving Comb Foundation of unexcelled quality.

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A full line of Root's Beekeepers' Supplies on hand at all times ready for immediate shipment.

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## Toepperwein & Mayfield Co.

Nolan and Cherry Sts.

San Antonio, Texas